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## ORIGINAL ARTICLES.

### THE TREATMENT OF SYPHILIS.\*

BY W. D. TRENWITH, M.D.,

OF NEW YORK;

GENTO-URINARY DEPARTMENT, VANDERBILT CLINIC, COLLEGE OF PHYSICIANS AND SURGEONS, COLUMBIA UNIVERSITY.

WHEN one considers how often in the practice of medicine the question "Have you ever had syphilis?" is asked and how often patients are found suffering from the disease, it is borne in upon us how important it is that this class of patients be so treated that the disease may be eradicated, and the patient and his descendants spared the troubles to which, if neglected, it gives rise.

For convenience and the purposes of easier description we may divide the treatment of syphilis into four stages, which stages are somewhat arbitrary and governed largely by the stage of the disease and not so much by the element of time, for the longer one has to do with treatment in these cases, the more does he see that treating syphilitic subjects by rote, is wholly out of the question, and that every case demands close attention and many variations of what may be called fundamental principles of treatment, viz., the prompt and efficient administration of Hg during that time when the round cells, caused by the syphilitic virus, are still young and more easily acted upon, and the administration of K. I. to eliminate the degenerated round cells and the toxins of syphilis.

So many different elements enter into a patient's response to medication, whether or not he is a blonde or brunette, robust and hearty or anemic and neurasthenic, calm or nervous, ability to get poor or good food, hereditary weaknesses, environments favorable to the carrying out of the best method of treatment for him, also his work and mental activity.

To revert then to the four periods, they may be divided as follows: (1) The secondary incubation or pre-eruptive period; (2) the eruptive stage including the first six or seven months; (3) from the sixth or seventh month to the end of the second or third year; the late secondary stage; (4) the tertiary stage.

The pre-eruptive stage, which usually is a period of about forty days, though it may extend over a much longer period, in an exceptional case ninety days elapsed, is a period of considerable importance, for it is during this time that we are gaining all the information we can of the patient's environments, physical and mental conditions and his habits of life. The attention is given to building up the patient's condition; seeing that such habits as smoking, chewing and the drink-

ing of alcoholics are stopped; that he rests well at night; that his food is sufficiently nourishing; that he gets plenty of fresh air; and is not subjected to mental worry.

It may seem unnecessary to enumerate all these apparently simple things, and yet I do assure you that these things are of great importance, even though simple, and that they are of very material advantage to the patient.

If the chancre has not yet healed it is necessary to keep it scrupulously clean, washing it twice a day, with warm water and some bland soap such as Castile soap, and then with a solution of bichloride of mercury, 1-2,000, applying afterward a small piece of lint or cotton to the surface of the lesion saturated with either bichloride solution, 1-2,000, or Lot. Nigra diluted one-half, my preference being for the latter. In certain cases where there has been engrafted on the sore a growth of pus-producing cocci, nothing, in my opinion, is better to apply after the washing than powdered iodoform, dusted lightly over the surface and then covered with a piece of lint saturated with bichloride solution, 1-2,000. Iodoform may be, and is, objected to on account of its odor, but inasmuch as it accomplishes the most good in the least amount of time it seems a few days of it ought to be tolerated. It should be discontinued just so soon as the sore has a healthy appearance, for it can then do no good to longer apply it. The treatment as outlined above is then carried out. Aristol and especially antinosine are also useful preparations and may be used with benefit in many cases. They are not subject to objection because of their odor, but they cannot always be depended upon to accomplish the prompt results of iodoform.

When the chancre heals, but there remains an indurated nodule, it is then time to begin the application of 50 per cent. mercurial ointment to its surface twice in twenty-four hours. Usually a prompt response to treatment is noted, the induration quickly disappearing under its use. The inguinal glands are not, usually, made out to be enlarged before the seventh to the tenth day, but as soon as they can be made out, applications of 50 per cent. mercurial ointment should be made to them. This early regional application of mercury ointment does not in any way interfere with the orderly sequence of syphilitic events—about gr. xv of the ointment should be used, and thoroughly rubbed into the groins every night or every other night.

Some medical men have advocated the cutting out of the chancre with the idea of aborting the disease. To accomplish anything at all, the sore would have to be cut out at almost its inception, which is, of course, impossible, as the lesion at this time is of only microscopic size. When a

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lesion becomes visible and is cut out very early, as it should be to be of any value whatever, it is impossible to make a diagnosis accurately in the vast majority of cases. Here then we see a chance for an enthusiast to claim a large number of cures without proper foundation in fact and the claim for the abortion of syphilis set up.

In a case of Dr. Taylor's, and to Dr. Taylor great credit should be given for setting the matter rightly before us, the patient appeared before him and it was advised to have a circumcision done, the foreskin being free from any visible lesion whatsoever. When, however, four days later he came to be operated upon, a very minute lesion had made its appearance upon the foreskin, it being just barely visible. Upon questioning more closely the patient admitted suspicious coitus some two or three weeks before. The circumcision was performed and the lesion was submitted to microscopic examination for diagnosis. A round-celled infiltration, characteristic of syphilis, involving all the blood-vessels of the specimen, as well as the site of the lesion, was found, and the diagnosis of syphilis was later confirmed by the appearance of a typical roseola. Moreover certain Russian experimenters (in Russia syphilis is extremely common and the opportunities for research and observation very good) have, by dissections, discovered that by the time the lesion makes itself manifest, the lymphatic glands of the penis and groins have already become involved. Therefore, while excision of a lesion may be desirable for some reasons, it certainly should never be done with the idea of aborting the systemic infection.

During this period a tonic, of which iron in some form is an ingredient, is advisable. I do not here offer you any formula, as you all undoubtedly have your pet way of administering iron. Later on when the secondaries have appeared and the patient is more profoundly under the influence of the disease, very frequently the call upon his blood for iron is so great that an anemic condition, very prejudicial to the progress of his case, may develop, and it is well to take "time by the forelock" and prevent this, if possible, by our early treatment. A patient will appreciate this, for he does not then feel as if nothing were being done and his case neglected. Good, plain, simple food, properly cooked, ought to be insisted upon, as well as that his night's rest should be good, and that he goes to bed early and gets from eight to nine hours' sleep every night. At this time he should be ordered to stop all alcoholic beverages, an exception being made in those cases, who have always been in the habit of taking a glass of wine at dinner, or an occasional glass of ale or beer, and who would be more comfortable with than without it. Trying to treat syphilitics who drink, in the common acceptation of the word, is like trying to fight fire without water. Tobacco it does not seem necessary to stop absolutely at this time. He may smoke in very great moderation until the secondaries make their appearance, when it must be

stopped for good, during the first six or seven months at any rate.

I consider this a very important point, for undoubtedly it is to the use of tobacco and the resulting hyperemia and congestion of the mucous membranes of the lips, mouth, tongue, tonsils, pharynx and palate that so many of the mucous patches and plaques are due, and it is of untold advantage to a patient to get through his trouble without these lesions, to say nothing of the very much greater source of danger he becomes, when thus afflicted, to infect others.

Imperfect teeth also play an important rôle in the causation of lesions, especially of the tongue. They should be put, therefore, in as perfect repair as possible, all cavities filled, or if they cannot be filled, the tooth pulled. There ought not to be any sharp edges to imperfect teeth, for almost invariably they will give rise to some stubborn lesion which may resist all our efforts to cure. The blood of a person recently syphilitic being infectious and the secretion from mucous patches of the mouth being especially virulent, the patient should be instructed to tell his dentist that he is syphilitic, so that the dentist will sterilize his instruments after use and use precautions to protect himself from infection. At this time, too, I am in the habit of prescribing a tooth-powder, to be used twice a day, morning and evening, made up as follows:

B Potass. Chlorate.....	5ss
Powdered Soap.....	5jss
Ol. Gault.....	q.s. 11

Such a powder may at times be distasteful, and I then prescribe

B Potass. Chlorate.....	3j
Water .....	5vij

to be used frequently through the day as a mouth wash. These measures together with the frequent use of the tooth-brush will serve to keep the mouth clean and sweet, and help a long way toward the prevention of lesions in the mouth, and will also prevent, to a very large degree, the salivation one is so apt to see when the mouth and teeth are foul and unclean.

Thus we approach the time when we may expect the appearance of the secondaries and the confirmation of the diagnosis, both to our own and the patient's certain knowledge. They usually, as you know, make their appearance in about forty days, in some rarer cases coming at the end of thirty-five days, or perhaps not until fifty, sixty, seventy, eighty or even ninety days have elapsed.

Just as soon as the eruption can be demonstrated it is my custom to have a plain serious talk with the patient. I call his attention to the tripod upon which Taylor says the diagnosis of syphilis depends, namely: "the sore, the enlarged lymphatic glands and the eruption," and then I explain the serious nature of his disease to him and impress upon him how largely upon himself depends his cure, for without proper cooperation on his part, we may hope to accomplish but little toward the ultimate cure. I tell him that the dis-

ease, through his blood, has invaded every part of his system and that he cannot hope to be pronounced cured before two or three years have elapsed, and that if he follows out directions carefully, he stands from 85 to 90 per cent. of a chance to be ultimately cured, and especially do I warn him that because under treatment all signs and symptoms rapidly disappear, it does not mean that the disease has been eradicated.

In my public and private practice I see a good many cases, who have had syphilis and who have been treated for it for from three months to a year perhaps and who have then drifted away from their physicians, largely, apparently, because they have not been told, as I often find upon questioning, of the gravity of their trouble and have naturally concluded themselves cured when signs and symptoms appreciable to them had disappeared.

It would seem, therefore, to be as much a part of the treatment as the actual treatment with medicines, to have this talk with them. Indeed I should call it a duty, for certainly we all know of how little avail is the treatment with medicines, partially carried out to prevent the later and, in many cases, incurable lesions which may occur. The patient is warned also as to his liability to infect others and is cautioned against drinking from public cups or allowing others to use articles, which he has had in his mouth, and against kissing, or having coitus, etc.

The eruption having made its appearance we must then begin to treat actively, and we must give some thought as to the conduct of the case, and in what way the patient shall receive his medication, for mercury can be, and is, given in a great variety of ways. In our endeavor to heal we are ever seeking a short cut, so to speak, but it is well to remember that in syphilis there is no such thing as a rapid transit cure.

It is not my purpose this evening to enter into a discussion of the merits of the various plans of treatment, suffice it to say that it would seem unwise to condemn absolutely all methods but one. Undoubtedly some have merit and may be used with advantage under certain conditions and in certain cases. I have had some opportunity of using different plans of treatment and of seeing the results both in my own cases and in cases of other practitioners, and it is as a result of this that I favor the method presented as being the best and giving the least return of late lesions.

The importance of time during the first six or seven months I cannot too strongly emphasize. It is upon the new young cells that mercury is most destructive, and so every day lost in treatment at this time is just so much of a loss to the patient's chance for recovery. The vacation periods at this time should be extremely limited and should occur only when the condition of the patient demands it.

Sometimes I begin with protoiodide of mercury in doses of from gr.  $\frac{1}{8}$  to gr.  $\frac{1}{4}$  t.i.d. p.c. The amount given is variable, being from gr.  $\frac{1}{8}$  to gr.  $\frac{1}{2}$  t.i.d. p.c., according to the susceptibility of

the patient. I do not continue it, however, beyond the first two or possibly three weeks, unless there is some very good reason for doing so. I much prefer, and usually do begin at once, injections. The body, as no doubt you all know, is divided into eleven parts by Dr. Taylor in his "Genito-urinary and Venereal Diseases," as follows:

(1) The neck and head; (2 and 3) the arms, palms and axillæ; (4 and 5) the legs and soles; (6 and 7) thighs, with groins and Scarpa's triangles; (8 and 9) the breast and abdomen; (10 and 11) the back, from the root of the neck to the lower part of the gluteal region.

It is of importance, in my opinion, to see to it that every portion of the body is covered with mercury, to this end directing that the spaces between the fingers and toes, as well as the palms and soles, shall be rubbed. I have seen some cases where this was not done return with syphilis developed upon parts thus neglected.

I use usually the official 50 per cent. mercury ointment, as being the most reliable and giving the best results, prescribed in oil papers, each to contain 30 or 40 grains. If it is desired to give larger doses it is easy to order the patient to use a paper and a half or two papers, etc. We are thus able to give exact doses.

The patient is then directed to take a warm bath at night or at least to wash with warm water the region to be rubbed, afterward using a little alcohol to sponge off the part, a small amount of carbolic acid added to the water used is sometimes very beneficial to those patients whose skin is tender and easily inflamed by the use of the ointment.

The patient is then told to take one of the papers of ointment and rub the ointment thoroughly into the part intended. I prefer a circular motion of the hand with the fingers held somewhat apart. From 15 to 30 minutes will be required to get the ointment so thoroughly rubbed in that the skin will feel rather dry again and not especially oily or greasy. A balbriggan undershirt or pair of drawers may now be put on and worn to prevent contamination of the bed or night linen, and ordinary underwear during the day. Each part of the body should be rubbed in rotation until the whole body has been covered, rubbing every night or every other night, watching closely for salivation, anemia or loss of weight, which conditions indicate that mercury is being given in too large amount and calling for a few days cessation of the treatment, when the course may be resumed but with usually smaller doses.

It is not safe to allow these patients to be longer away than four or five days. The bowels should be kept open, there being a tendency to constipation in many of these cases, the mouth scrupulously clean and above all no smoking should be allowed during this period. If the patient does well and has not suffered in any way from the measures employed, the amount of ointment may be raised to 45 grains and the body rubbed as before. This to be again repeated with

60 grains if the patient can stand it or with a smaller amount, if not.

The inunctions are now stopped and after a day or so the sat. solution of potassium iodidi is given, beginning with 10 drops, greatly diluted with water or milk, and running rapidly up to 20 or 25 drops t.i.d. p.c. I would ask you to note the early use of potass. iodidi. Except in those cases of syphilis early manifesting extreme nervous or cerebral symptoms, when potass. iodidi is indicated, K. I. has not usually been used much before the sixth month, but it is of decided benefit in removing broken down syphilitic cells and toxins at this time. Should the iodide cause any gastric disturbance, Fairchild's Essence of Pepsin or the Elixir of Lactopeptin added to the water or milk, in from 3j to 3ij doses will usually be sufficient to prevent it, this to be used for a period of possibly 15 or 16 days, when inunctions are again begun and repeated once, then the K. I. is again begun as before and used for about the same period, when another course of inunctions is given and once repeated as above followed by K. I., this course, when all is well, to be repeated until the sixth or seventh month as the case may demand, during which time the patient will have covered the entire body from seven to twelve times. A rest of three or four weeks may now be given and then the patient is put upon mixed treatment

B. Hydrarg. Biniodidi..... pr.  $\frac{1}{2}$  to gr.  $\frac{1}{2}$   
Potass. Iodidi..... tr. v to gr. xv  
Aq. destil..... q.s. 3j

M. Sig.: 3j t.i.d. p. c.

in plenty of water. To this tr. cinch. co. may usually be added with advantage. The patient takes this with occasional intermission of two to four weeks until the first 12 or 13 months have passed. After this K. I. is given in greater amount up to 50 or 60 grains t.i.d. p.c. about two months out of every four and occasionally using the mixed treatment. The lymph glands should be constantly rubbed until they are no longer to be made out easily.

This will carry us up to the second year, when if all is well, treatment may be stopped entirely and the patient kept under observation for another year. Often it is necessary to carry the treatment up to two and a half or even three years, when he may be pronounced cured if no lesions manifest themselves and the lymphatic glands have assumed their normal size. I have detailed here a typical case, but unfortunately there are also many cases which do not run the smooth course I have outlined. We have all sorts of conditions to deal with, and modifications must be made in the plan of treatment to suit the necessity of the case.

The headaches of syphilis usually disappear promptly as soon as active treatment is begun. In some cases, however, they persist and it is then necessary to resort at once to the use of K. I. in sufficient amount to control them, or to a combination of mercury and K. I.

Alopecia occurs in a certain percentage of cases

and is usually markedly benefited by the application at night of ammoniated mercury 10 to 25 per cent. in vaseline and washed out in the morning with bichloride 1-3,000.

Mucous patches in the mouth, on tongue, lips, palate, tonsils, or pharynx are best controlled by strict cleanliness of the mouth and the application of a 5-per-cent. solution of silver nitrate every other day and the use of a gargle containing mercury such as

B. Hydrarg. Bichlorid..... gr. iii  
Tinct. Myrrh..... 3 ss  
Aq. destil..... q.s. 3 viii

M. Sig.: Gargle.

or

B. Alum..... 3 j  
Chlor. Potass..... 3 iss  
Aq. destil..... 3 viii

M. Sig.: Gargle.

Condylomata are, in most cases, promptly cured by cleansing and the dusting on of calomel and bismuth subnit. aa, and the wearing of cloths to prevent the chafing of adjacent parts. Syphilides of the palms are benefited by rubbing in of mercury ointment and keeping them dry. All these measures, of course, in addition to the general treatment.

Should salivation occur during the inunctions, stop them at once, move the bowels freely with Epsom or Rochelle salts for a few days. Use in the mouth some wash containing alum and potass. chlorate, borolyptol or something similar. In cases of secondary syphilis developing relapsing syphilides or gummatata, mercury ointment is applied to the syphilide or gummatata and pretty large doses of K. I. are given internally and sometimes, especially in cases of neglected syphilis, general inunctions are of very great benefit. Some stubborn lesions will yield readily to fumigations of calomel in the presence of water vapor, or to the use hypodermically of bichloride of mercury in solution. Some too will yield to

B. Hydrarg. Bichlorid..... gr. j  
Collodion ..... 3 j  
M. Sig.

Paint over part and renew from time to time. Plaques and gummatata of the tongue, as well as some of the later tertiary lesions of the body, are very much benefited by the use of hypodermic injections of bichloride of mercury. In my hands this method has yielded some very brilliant results and I know of nothing equal to it in these cases. A needle from  $1\frac{1}{4}$  to  $1\frac{1}{2}$  inches long is best and it should be thrust directly into the deep muscular tissues of the gluteal regions, after first sterilizing the skin at the point of puncture. The bichloride is best made up in two solutions of which  $mX=gr. \frac{1}{8}$  in one and in the other  $mX=pr. \frac{1}{4}$ . With these solutions it is possible to vary the amount given, as may be required. I usually begin with gr.  $\frac{1}{8}$  giving it every second or third day and gradually working up until gr.  $\frac{1}{8}$  to gr.  $\frac{1}{2}$  is being given. Great care must be used, for it is easy to salivate. In a number of cases in which I have used this method the simultaneous

use of K. I. has proved of considerable value. The injections are rather apt to be painful lasting for two or three days.

Spraying the skin at the point of puncture with ethyl chloride seems to diminish the pain, both at the time of puncture and subsequently.

It is also a method of great value when it is required for some reason, as in malignant syphilis, to get the patient very quickly under the influence of mercury. As a routine method of treating syphilis, it is not to be advised.

In tertiary syphilis it is best to use K. I. with a free hand, running up to an  $\frac{3}{4}$  j or even much more a day, if necessary, and the application of mercurial ointment to any broken down places.

The biniodidi of Hg is often combined with advantage with the K. I. We cannot hope to cure these patients, but we can make them comfortable and keep them in fair condition, and usually free from tertiary lesions by proper treatment. These persons must be taking Hg and K. I. pretty much all the time.

Fumigation is of considerable value in some cases of stubborn syphilitics not yielding to other methods of treatment. It is best given in an institution devoted to the treatment of syphilis and in accordance with the physician's orders. Calomel and cinnabar are usually used in varying amounts usually in the neighborhood of

R Calomel ..... gr. xx  
Cinnabar ..... gr. xi

Its effects must be watched for it may easily salivate.

Fumigation and the hypodermic use of bichloride are both very valuable and should always be thought of and used when other means fail us.

140 West Ninety-fourth Street.

#### THE TREATMENT OF ACUTE GOUT.

BY J. R. CLEMENS, M.D., M.R.C.S. (ENG.),  
OF ST. LOUIS.

ALTHOUGH a certain great diagnostician used to make light of the difficulties of the treatment of diseases, maintaining that the science of medicine was synonymous with the science of diagnosis as treatment that was effective, presupposed a diagnosis that was correct, I venture to affirm that all therapeutic measures are not as simple in application or follow as spontaneously from a previously made and correct diagnosis as he would have us believe.

Before entering into detail of treatment of acute gout, a few remarks concerning the diagnosis of acute gout may perhaps not be out of place.

In a diagnosis of acute gout we must take into consideration: (1) The sex of the patient; (2) The age of the patient; (3) heredity; (4) physical signs of the gouty diathesis.

Dwelling for a moment on each of these we will find that as regards (1), Sex. Acute gout is much commoner in men than in women, probably due to the fact that waste and effete matter in women finds an outlet in the menses. After the

menopause gout becomes more common in women. (2) Age. Acute gout is rarely seen before the third decade of life while rheumatism is a disease of childhood and adolescence. (3) Heredity. A gouty family history is an important point to ascertain. (4) Physical Signs. Tophi are as characteristic of gout as are chances of syphilis.

In the treatment of a case of acute gout we must consider general (medicinal and dietetic) and local treatment, and, what is often neglected, the individual. The general indication for treatment is elimination and this we effect by mercurials, salines, diuretics. Prevention of reaccumulation and the exhibition of specifics complete the treatment.

On taking charge of a case of acute gout, unless there be indications to the contrary as an exhausting flux or great debility, treatment should be begun by a blue pill (pil. hydrargyri. gr. iv) or calomel (gr. iii), followed several hours later by black draught (mist. sennæ co.  $\frac{3}{4}$  j), the idea being not so much free purgation as relief of hepatic congestion. When the cathartic has acted well, the following mixture should be taken every three hours (in doses of two tablespoonfuls) until the motions become very free when the time between doses may be increased:

R Magnesii Sulphatis .....	5iss
Magnesii Carbonatis .....	gr. xxx
Potassii Citratis .....	gr. xxx
Tinct. Seminum Colchici .....	mlx
Aquam. Menth. Pip. ....	ad 8j

The colchicum should continue to be given until all pain in the joint has disappeared but should be administered in such doses and at such intervals of time that the full physiological effect of the drug (nausea, vomiting, diarrhea and a tendency to collapse) is never allowed to develop. Some there are who prefer the vinum colchici made from the corm but in my hands the tincture made from the seeds has proved more certain in its effects, more gentle in its action and approaches nearer to a standardization and hence at all times more suitable for accurate dosage.

The claims urged in favor of salicylates as specifics may be dismissed to the limbo of unproven remedies, together with Ebstein's morphine régime. At all times, in season and out of season, the patient should be urged to drink copiously of hot water.

The local treatment of the joint is most important, in view of the fact that wrong local treatment is sometimes followed by disastrous results—even death.

The local treatment should consist in *warmth*—this is the one essential and all important—the manner in which heat is applied to the joint is more a matter of individual preference. The following is as good as any and one recommended by Luff:

R Sodii Carbonatis .....	5ij
Tinct. Opii .....	5ij
Lin. Belladonnae .....	5ij
Aquam .....	ad 5vij

Some of the lotion should be mixed with an equal quantity of hot water and into the resulting mixture some old fine linen should be put to soak and, when wrung well out, applied to the joint as hot as the patient can stand it. Around the dressing a yard of thin rubber should be placed with safety pins. Over all a generously thick supply of cotton wool should be wrapped and held in place by a loosely applied four-inch roller bandage. The limb should then be raised by placing pillows beneath it. The bedclothes may be kept from pressing on the joint by cutting out a cradle from a cardboard hat box. During the period of acute pain bed pans and bed urinals should be used. Cold applications should *never* be applied to a gouty joint, as there is danger of converting articular into retrocedent gout with fatal consequences. For the first day or two of an acute attack of gout the diet should be milk in divers forms, such as: bread and milk; tea made with boiling milk instead of with water; milk puddings of tapioca, sago, rice; milk and arrowroot, etc.

As soon as convalescence is established the dietary may be made more generous but the following articles should be forbidden the gouty for all time: Salt meats and salt fish; shellfish (except oysters); all rich pastries and sweets; soups of all kinds; pickled and hot foodstuffs (peppers, curries); the four vegetables, tomatoes, asparagus, rhubarb, green peas; all beers, wines and champagnes (whisky may be allowed if a stimulant is imperative); sugar and table salt (except in small quantities). During convalescence the joint, when pain-free, should be gently massaged and permission to leave the house, if the season be winter, should not be given without thought. The following mixture as a tonic and a prophylactic measure should be continued for two or three months:

B. Potassii Iodidi ..... gr. x  
 Spts. Ammoniae Aromat. ....  $\frac{1}{2}$  xv  
 Inf. Gentianæ Co. .... ad 5j  
 M. ft. mist.

Sig. 5j thrice daily after meals.

For one week after convalescence is established, the colchicum mixture should be taken once daily on rising in the morning. The patient should be warned against a premature relaxation of the régime and cold tubbing forbidden for at least a month. A brisk daily walk of half an hour will do much good toward keeping off the evil day of another attack. The urine should be examined carefully during the attack for albumin and an estimation of the amount of urea and uric acid frequently made. The significance of the presence of albumin after the attack has passed off is obvious.

**American Medical Association Meeting.**—For this occasion the Mobile and Ohio Railroad will make a rate of one first-class fare for the round trip, viz., \$18.00 from St. Louis. Tickets sold May 1 to 4, inclusive, limit 10 days, with privilege of extension to May 30, on payment of 50 cents. Write to Jno. M. Beall, A.G.P.A., St. Louis, for full particulars.

### CHRONIC PARENCHYMATOUS PULMONARY TUBERCULOSIS.\*

BY WM. N. BEGGS, A.B., M.D.,  
 OF DENVER, COLO.;

VISITING PHYSICIAN TO THE NATIONAL JEWISH HOSPITAL FOR CONSUMPTIVES AND THE DENVER EMERGENCY HOSPITAL, DENVER, COLORADO.

AMONG the vast hordes of pulmonary invalids who seek the Rocky Mountain region in the hope of restoration to their pristine health and vigor, there are large numbers foredoomed to disappointment. This is in a great number of these cases inevitable. Many come without having received professional advice and many in spite of their physician's opinion that their cases are not such as would be benefited by a change of climate.

Eliminating all these, there remains, however, a considerable proportion whose journeys have been undertaken as a result of error in diagnosis, or rather, in estimation of their chances for recovery. We who see so many cases of pulmonary tuberculosis are, to a certain extent at least, responsible for this state of affairs. We probably do not lay sufficient stress upon the differentiation of the different types of this affection and their prognostic diagnosis. Even though these have already been described, they are not sufficiently well recognized as a general rule. Iteration and reiteration of even that which is known is more than justified by the benefit which arises therefrom.

To the physician who deals with cases of consumption, and who in general practice does not, and to the victim of this most widespread affection, the question of prognostic diagnosis is of very great importance. As aid, therefore, to the accurate determination of this element, such classifications as after sufficient use show themselves to be *really practical* and not simply finespun theoretical differentiations are of considerable value. One of these forms the subject of this present paper.

Even the modern text-books on general practice, many of them, show a pronounced tendency to give less attention to the subject of pulmonary tuberculosis than its prevalence and seriousness would seem to demand. The method of discussion and classification also in many cases leave much to be desired. Thus, for example, Strümpell<sup>†</sup> treats the whole subject of tuberculosis of the lungs in one chapter without subdivision into classes, giving two paragraphs of thirteen lines to a simple notice of disseminated pulmonary tuberculosis and one paragraph of twenty-three lines to the pneumonic form.

Osler<sup>‡</sup> presents the classification which is most commonly accepted, viz.: (1) Tuberculo-pneumonic phthisis—acute phthisis; (2) chronic ulcerative phthisis; (3) fibroid phthisis.

With the first and last of these we shall not

\* Read before the Denver and Arapahoe Medical Society, November 18, 1902, and the Boulder County Medical Society, December 4, 1902.

† Strümpell. *A Text-book of Medicine*. Third American Edition. New York, 1901.

‡ Principles and Practice of Medicine. Fourth Edition. 1901.

concern ourselves in this paper. In the description of the chronic ulcerative form he recognizes the numerous pathological lesions which may be present, but describes it, the ulcerative form, as a disseminate form, which it truly is.

Tyson\* accepting the same classification, divides the chronic ulcerative phthisis into three stages: (1) Incipient stage or beginning deposit; (2) stage of complete consolidation; (3) stage of softening or cavity formation.

Ordinarily, when we speak of the stage of complete consolidation we refer more or less inaccurately to the consolidation of the conglomerate tubercles, separated by a greater or less abundance of pulmonary tissue which, whether normal or affected by pathologic process, nevertheless has sufficient respiratory power to make it recognizable as performing that function. It is, however, somewhat difficult to determine from his description whether this is Tyson's conception of his second stage or whether he refers to a more massive, widespread consolidation. The physical signs which he enumerates scarcely apply to the former. The latter, in my opinion, cannot be considered the regular, or even a frequent, stage of the most common type of chronic pulmonary tuberculosis which usually has the general form of a distinctly disseminate, lobular or bronchopneumonic type.

These examples might be multiplied indefinitely, but without present profit to us. By them, however, it is simply intended to call attention to the state of affairs in the general textbooks, of which these are excellent representatives.

Powell,† on the other hand, in discussing subacute and chronic tuberculosis of the lungs, speaks as follows: "In a certain not large proportion of cases which commence with the signs of alveolar catarrh, or tubercular alveolitis, the pulmonary disease, instead of assuming the acute and rapidly confluent or disseminated forms above described, follows a more insidious course, in which the destructive changes are affected by a drier and more gradual necrosis. In these cases great thickening of the alveoli, gray induration, in which some individual granules of tubercle may or may not be distinguishable by the unaided eye, is substituted for the more usual and rapidly caseating process. We have, in fact, a local pulmonary tuberculization, of slower and more insidiously destructive progress than caseous pneumonia, so far as the lung is concerned, but more obstinately and continuously progressive, more prone to be succeeded by early implication of the other lung, supposing both are not from the first implicated, more quickly followed (sometimes even preceded) by disease in other organs, particularly the larynx and intestines; and, in short, though a chronic or subacute disease, yet one of more early average termination than the corresponding pneumonic forms of phthisis.

"This form of local tuberculization spreads

through the lungs from apex to base, with a well-defined gray advancing margin, immediately beyond which the highly vascular but crepitant lung tissue presents a striking contrast to it. On examination, however, more minutely with a lens, the alveolar walls are found considerably thickened to some little distance (perhaps half an inch) beyond the defined margin, though the alveolar spaces are not occupied with catarrhal cells—at least not uniformly so, or to any material extent. A few outlying patches or nodules may sometimes be observed, evidently of infectious origin. I am not aware of any mere inflammation at all analogous to this in its invasive characters. It most resembles lupus of the cutaneous surface, and since this comparison was first made in the 1878 edition of my work lupus has come to be regarded as a truly tubercular affection, in which a bacillus is found identical with that of tubercle."

The foregoing picture of the changes produced is a very striking one and one that I have seen more than once on the autopsy table. The sum total of the clinical picture is not less striking.\* It is, however, exceedingly insidious in its onset and may very easily escape the attention of both patient and physician. The first indication of anything out of the way is very likely to be a simple indisposition and a gradual diminution of strength, which may not be noticed, however, by the patient for some time, and when noticed, may be thought by him to be simply temporary. He thinks he is simply run down. Cough may be present, but is not at all constant. When it is present it is not likely to be troublesome, at least until the later stages of the disease.† Pain is usually absent. There is a gradual loss of appetite, but this may also not be marked until late. So far as the temperature is concerned, it presents nothing very characteristic. There is usually some fever. This is more constant than in the other chronic forms of the disease and more obstinate. The periods of freedom from fever are fewer and of shorter duration. The temperature, however, is usually not high and does not so often give the impression of mixed infection as is the case in the chronic catarrhal form.

A very constant and important symptom is an early, marked anemia, and in a comparatively short time the tuberculous cachexia is well established. In strong contrast with this is the lack of any considerable degree of loss of flesh until later in the disease. Even when the patient is evidently a very sick person he may remain in very good flesh. Hemorrhage is not common. When it does occur it is usually slight and of trivial importance. Night sweats occur frequently and in varying degrees. Increased rapidity of respiration makes its appearance usually early and is quite persistent. Notwithstanding the existence of these various symptoms, often their presence

\* In all the forms of pulmonary tuberculosis the catarrhal symptoms predominate toward the last. Then, in them all, the cough becomes troublesome and the sputum copious. The last stage is not a good one for differentiation, and it is also a matter of indifference, practically, then.

† It is especially the clinical features of this form of the disease which it is the purpose of this paper to emphasize.

is to be determined only by careful attention. In nearly all cases they do not become intense, with the few exceptions named, until late in the disease, and it is frequently difficult or impossible to convince the patient that he is in a dangerous condition.

I have had the fortune to observe a considerable number of such cases, and in order to illustrate the apparently trivial nature of the symptoms and bring out the physical signs, have selected several case-records from my recent histories, purposely omitting repeated special mention of symptoms which were not present, but might have been expected.

*Case I.*—This case developed in Colorado. No attempt is made here to decide whether or not the infection occurred before her coming to this state in 1891. P. B., female, age thirty-two years, a housekeeper, was first seen by me March 18, 1900. Her mother, three brothers, one sister, and a brother of her mother have died of consumption, the first named in 1898. At the time of consultation one brother was also affected by the disease. Her own personal history was excellent, she not being able to recollect having suffered from any affection except what she called "an occasional touch of rheumatism." She claimed not to have had any symptoms of disease at all until two weeks prior to consultation, when she caught cold, although she had had nasal catarrh for two or three years. At the beginning she had severe cough with some abdominal (diaphragmatic) pain and slight fever. The cough had moderated, the sputum was not excessive, was yellow and thick and microscopic examination revealed a few tubercle bacilli. The physical signs were as follows: The appearance was unhealthy, she was decidedly anemic. The temperature was 97.4° F.; pulse 95, small and soft. The chest form was normal and she was moderately well nourished. The respirations were thoracic in character, regular, easy, 26 to the minute. Palpation revealed no abnormal fremitus and percussion no abnormal dulness. On auscultation the breath sounds were found to be feeble and on forced respiration and coughing a few fine subcrepitants were to be heard in the left second and third intercostal spaces anteriorly and posteriorly.

This was certainly a very incipient case. I know the danger of attempting to classify a case in such an early stage. It is somewhat doubtful whether it belongs to the category under discussion, but some of the symptoms would indicate that it does. The patient passed out from under observation before that could be positively determined.

*Case II.*—N. B., male, a restaurateur, came for examination January 12, 1901, having arrived in Colorado the previous day. His family history is doubtful. His mother died when he was one and a half years of age, the cause of death being unknown to the patient. His father died of the grip. A half sister died in 1899 at the age of sixteen, but the patient had not seen her since her sixth year. His personal health had been ex-

cellent, the only affection of which he had any recollection being one of the exanthemata in infancy. Present affection began ten weeks prior to consultation with me in a cold contracted after a definite exposure, since which time he had coughed. About a week after the exposure he had chills and fever daily in the evening for a week. Then in five or six weeks he had pain in the chest which was relieved by treatment. He was then told to change climate. During the first few weeks of sickness he had moderate night sweats. He had not lost any weight. An examination of the sputum, which was scanty, white and frothy, but had earlier been yellow, revealed a few tubercle bacilli. The physical signs were as follows: His appearance was slightly cachectic. The temperature was 98.8° F.; pulse, 98, full and of moderate tension. The patient was moderately well nourished and had normal chest form, but the natural depressions were very distinct. In the left supraclavicular region was an oval, thin scar, the evidence of an abscess which patient had had four or five years prior and which had opened spontaneously. The respirations were abdominothoracic in type, without special characteristics and 24 to the minute. Palpation and percussion revealed a displacement of the heart about three-quarters of an inch to the left. Anteriorly there was moderate pulmonic dulness as low as the second rib on the left side. On auscultation the breath sounds were found to be faint on the same side posteriorly as low as the seventh intercostal space, but somewhat rude with prolonged expiration in the right suprascapular region. There were a very few fine subcrepitant rales to be elicited in the left suprascapular region, but only on coughing. Anteriorly the heart sounds were transmitted to the left.

This was also an early case, somewhat more advanced than the preceding one.

*Case III.*—E. B., female, age twenty-nine years, housewife, consulted me August 20, 1901. She had come from New York two weeks before. She has a brother suffering from pulmonary tuberculosis, otherwise the family history is negative. She herself had the grip two years ago and has been the subject of constipation for the last seven years. For the last three months she has been losing weight and strength. There have been no other subjective symptoms of disease. She has had no cough and no expectoration. The skin was pale, decidedly so. Her temperature was 99.4° F. The pulse was of moderate volume and strength, 103 per minute. The chest form was normal except for a slight flattening of the second rib on the right side. The respiration was chiefly thoracic, somewhat restricted on the right side, rather shallow, quiet and easy. The vocal fremitus was feeble except in the right infraclavicular region. Percussion revealed a decided dulness on the right side anteriorly, reaching from the clavicle to the third rib. In the same region there was slightly exaggerated vocal resonance and fine crepitation on coughing.

*Case IV.*—This case is specially interesting.

L. R., male, single, age thirty years, a collector, was first seen by me September 8, 1901, three days after his arrival in Colorado from Cincinnati, O. His family history was negative. He could recollect no personal illness of any importance. He had had a light attack of the grip, lasting only a couple of days, nine years ago, and had been subject to occasional slight attacks of indigestion. His habits had been good except that he had been a rather free cigarette smoker prior to the beginning of his present sickness; since then he had been abstinent. Christmas, 1900, he "caught cold." A diagnosis of pleurisy was made and he was confined to the house one day. A few days later he had an attack of what was called the grip and was confined to the house over two months. He has lost strength and fourteen pounds in weight. In the earlier months of his sickness he had night sweats. For the last three or four months he has been subject to periods of three to four days' daily chills, fever and sweating in the morning, alternating with three or four days' freedom therefrom. Cough was not troublesome and the sputum was scant, mixed mucus and pus, and the first trace of blood was observed the morning of the examination. His general appearance was strikingly cachetic. His tongue had a moderate yellowish white coat. He stated that his bowels had been loose for five days. His temperature was  $99.8^{\circ}$  F. at 10 A. M. and his pulse 127, full, but moderately tense.

Inspection showed a normal chest form, with good nutrition but marked sinking of the natural depressions on both sides. There were a few patches of pityriasis versicolor on the skin. The respirations were abdominothoracic, easy, and regular, 29 to the minute. The vocal fremitus was distinct throughout, and a little more marked over the right apex (the left was the one affected). The cardiac impulse could be felt in the fifth intercostal space in the mammillary line. Percussion revealed that the heart was displaced about an inch to the left. There was also marked dulness over the left apex as low as the first rib. In this area a few mucous râles, could be heard together with a prolonged expiratory sound of tubular quality. There was some exaggeration of the vocal resonance and bronchial breathing in the left third, fourth and fifth intercostal spaces, extending from the line of the superficial cardiac dulness to the midaxillary line. On coughing fine crepitation could be heard throughout the left chest anteriorly as low as the fourth rib. Posteriorly only prolonged expiration with slightly tubular quality could be elicited in the left supraspinous region on forced respiration.

A diagnosis of the type of pulmonary tuberculosis under discussion was made and its seriousness explained to the patient. He remained under observation about three months and then disappeared.

March 1, 1902, he reappeared for examination and the following marked changes were found: In the left chest anteriorly there was very decided dulness as low as the fourth intercostal

space and posteriorly throughout the supraspinous region. Wintrich's sign with tubular breathing and bronchophony, both vocal and whispered, were obtained throughout a large area bounded by a line running from the lower border of the left pectoralis major and the anterior axillary border to the left sternoclavicular articulation, then downward to the third rib, then downward and outward to the fourth intercostal space an inch to the left of the nipple, then irregularly upward to the point of starting. Whispered bronchophony could also be obtained between the upper angle of the right scapula and the vertebral column. Subcrepitant râles, numerous but very fine, could be obtained throughout the left chest anteriorly and laterally and in the right chest anteriorly as low as the third rib and posteriorly throughout the supraspinous region. The cough had not been troublesome but the dyspnea was slightly increased and the strength somewhat diminished, although there had been a slight gain in weight.

After an explanation of the progress of the case, the patient, being dissatisfied, for which I could not blame him, the condition appearing to him to be rather better than worse, went to another physician for examination. The latter, perhaps not recognizing the type of the disease, informed him that, so far as the pulmonary involvement was concerned, his condition was not serious and that the prospects for recovery were good. With this prognosis I heartily disagreed and predicted a comparatively early fatal termination. About four months later (July 6) the patient developed a myelitis and tubercular cerebral meningitis and died July 27, 1902.

*Case V.*—J. B., female, aged eighteen years, housewife; consulted me November 3, 1900, a week after arrival from Bridgeport, Conn. Her family history was negative. Her general health had been excellent. She had had measles in childhood and a miscarriage at the third month three months ago. Seven months ago patient "caught cold" and has been coughing at intervals since. During the past three months she has occasionally vomited from the coughing. During the last two months, except for the last two weeks, she has had variable, migratory, sharp pains. In about five months time she has lost twelve pounds. She has occasionally had fever and night sweats. Her cough is not troublesome and the sputum is slight in amount, white and frothy.

Patient's appearance is slightly cachetic. Her temperature is  $100^{\circ}$  F.; pulse 125, full and rather soft. She has a normal chest form and is fairly well nourished. Her respirations, 37 to the minute, are abdominothoracic, shallow, but regular. The vocal fremitus is faint except in the right infraclavicular region. Percussion reveals dulness as low as the second intercostal space on the right side anteriorly. The respiratory sounds are generally diminished, except in the right supraspinous region, where there is roughened breathing with prolonged expiration on forced respiration.

There are a few inspiratory subcrepitant râles, on coughing only, in the region of dulness and in the left suprascapular region and the upper half of the interscapular region. They may be heard on forced respiration in the lower half of the right interscapular region.

By February 1, 1901, there had been added clicking sounds in the third and fourth intercostal spaces to the left of the heart. By August 20, 1901, the dulness had increased in intensity and extent until anteriorly it reached the third rib and posteriorly could be found to extend as low as the seventh rib. There were also subcrepitant râles to be heard throughout the left lung anteriorly above the fourth rib.

On October 29, 1902, the condition was as follows: Anteriorly there was marked percussion dulness on the right side as low as a line drawn from the junction of the second rib with the sternum to the fourth rib, a little anterior to the axillary line, and on the left side as low as the second rib, posteriorly on both sides as low as the fourth vertebra. There were bronchial breathing and vocal and whispered bronchophony over the area of dulness in the left side anteriorly. There was whispered bronchophony in the right suprasternal region and posteriorly on both sides of the vertebral column at the second intercostal space. Posteriorly there was exaggerated vocal resonance on the left side as low as the sixth rib, on the right as low as the fourth. There were fine inspiratory subcrepitants to be heard on coughing, anteriorly on the right side throughout the area of dulness and on the left as low as the second intercostal space; posteriorly on the right side as low as the ninth rib. On forced respiration subcrepitants could be elicited throughout the lower inch of dulness on the right side anteriorly, and from the first to the second intercostal space on the left side anteriorly. Posteriorly very fine inspiratory subcrepitants could be elicited on forced respiration from the third to the fourth ribs on the right side, and from the apex to the sixth rib on the left.

*Case VI.*—T. H., female, age twenty-four years, housewife; came for examination October 1, 1901. She had lived in Minnesota until four and one-half months before. Her mother had died of consumption in April, 1898, having been sick two years, during which time the patient had been taking care of her. Father, mother, brother, and sister had had occasional fainting spells.

The patient's health had been good. She had had a moderate bilateral goiter as long as she could remember, and she could not notice any increase in its size. She had the grip in December, 1896, and again in February, 1901. Since this latter attack she had never felt as well as before. She has never had a steady cough, either before or after this attack. She has had a more or less steady heavy feeling in the epigastrium, with occasional attacks of acute cramping pains through the abdomen, which would then become general, being accompanied with shortness of

breath. There would always be diarrhea with these attacks, the onset being sometimes a little before, sometimes a little after, the beginning of the abdominal pains and lasting four to six days. She would also have severe pains in the upper lumbar region, and about a year and a half ago had inconstant pains in the chest and limbs. In the spring of 1901, for about a month, the ankles would swell during the daytime, the swelling not completely disappearing during the night. With the onset of warm weather this disappeared without any treatment. In the spring of 1900 she had three or four hemoptyses of moderate amount, all occurring within about two weeks, and all being occasioned by excitement or exertion or both.

Her weight was 134 pounds, that being about her usual summer weight. In the spring of 1901 it was 127 pounds. Her usual weight in winter is about 150 pounds. She has had fever, but no night sweats. At the time of the examination she was suffering with an obstinate diarrhea and has had a constant tendency to that since then, although it has been kept more or less under control.

Her expression is hectic. The temperature is 100.4° F.; the pulse 122; full and of moderate tension. The chest is long and somewhat flat. The nutrition is below par. The respiration, 37 per minute, is abdominothoracic, shallow, regular, not labored. It is somewhat restricted on the left side. The vocal fremitus is faint except over the right apex. The cardiac impulse is felt in the third, fourth and fifth intercostal spaces in the mammillary line. Percussion shows that the heart is displaced to the left, about an inch. There is dulness over the left apex, anteriorly as low as the second rib, posteriorly in the suprascapular region. The respiratory murmur is very faint throughout the chest on ordinary respiration. Above the left clavicle there are inspiratory and expiratory sibilant râles, slightly exaggerated vocal resonance, and, on forced breathing, a tubular quality to the breath sounds. Between the inner third of the left clavicle and the third rib fine subcrepitant râles may be obtained on forced respiration. These may also be obtained, but only on coughing, between the middle third of the left clavicle and the third rib as well as in the right suprasternal region and both interscapular regions above the fourth vertebra. There is exaggerated vocal resonance in the right suprascapular region and roughened breathing with prolonged expiration in the left. Bronchial breathing could be obtained about two inches to the right of the sternum in the first intercostal space.

The diagnosis of chronic parenchymatous pulmonary tuberculosis in a neurotic patient was made, which the subsequent history tends to confirm, although the progress has not been as marked as in Case IV.

\*Note.—The sister of Case VI came to me July 3, 1902, having been in Colorado one week. She had been in perfect health, so far as she knew,

until an attack of measles which began five weeks before I first saw her. Since then she had been coughing, but at the last week in June had been almost free from cough, and now thought that she must have caught fresh cold. The few physical signs of abnormal character elicited were as follows: Patient has a small bilateral goiter, a little larger on the right side than on the left, which began three years ago. She was somewhat pigeon-breasted and not very well nourished. The vocal fremitus was generally faint. The apex beat was to be felt in the fourth intercostal space, one-quarter inch beyond the mamillary line. There was dulness in both supraclavicular and in the left suprascapular regions. There was cracked-pot sound in the left first intercostal space near the sternal border and second intercostal space, just within the mamillary line. There was bronchophony on the left side from the first to the third intercostal spaces, and bronchial breathing in a strip just above the heart dulness from the second to the fourth ribs. Fine subcrepitant rales were present throughout the left side from the apex to the fourth rib anteriorly and the fifth rib posteriorly. There was exaggerated vocal resonance throughout the area of dulness posteriorly. By August 8 the following changes had taken place: The subcrepitant rales had disappeared below the first intercostal space, anteriorly. A few sibilant rales were observed in the left supraclavicular space. The area in which bronchophony, both vocal and whispered, could be elicited was considerably increased. Two or three examinations of the sputum failed to reveal the tubercle bacillus.

This is presented as a doubtful case, though my belief is that it will prove similar to her sister's. If so, it would be of interest as tending to show the part played by an individual or family constitution in the development of the clinical form of tuberculosis.

*Case VII.*—C. F., female, age seventeen years; occupation, housework; was examined April 11, 1902. Her father is dead, the cause not being known to the patient. One sister died of tuberculosis. Two brothers are living, but are sickly. Patient herself had pneumonia in the winter of 1901-02, and has had what she called pleurisy "off and on." Two years ago she caught cold, and since that time has not been feeling well. She has lost strength and has had fever and dyspnea, but no night sweats. Her cough is somewhat troublesome and accompanied by expectoration of a moderate amount of purulent sputum. She has had one moderate hemorrhage. She has a hectic flush and a decidedly cachectic appearance, but is well nourished. The chest form is normal. The respiration is abdominothoracic, regular and easy, but the difference between forced expiration and forced inspiration is only one inch. Vocal fremitus is imperceptible except in the infraclavicular regions. Percussion gives decided dulness over the left lung as low as the third rib anteriorly, and the angle of the scapula pos-

teriorly, with hyperresonance through the right side. Wintrich's sign, bronchial breathing and vocal and whispered bronchophony are present between the clavicle and the second rib on the left side. In general, the respiratory murmur is very faint. A few fine subcrepitant rales may be obtained throughout the area of dulness on deep breathing.

*Case VIII.*—L. J., male, age thirty-nine years, buttonhole maker; consulted me December 4, 1901. He had been in Colorado three days, having come from New York. Patient thinks that a sister died of tuberculosis in Europe four or five years ago. A brother in Europe is sickly. He, himself, has had no sickness save an affection of the scalp at ten. He has been an excessive cigarette smoker until six or eight months ago, is now abstinent; he has been very free sexually until seven years ago.

In April, 1901, without known cause, he began to feel weak and have a cough. He had moderate night sweats in the beginning of his sickness. In the middle of September there was "a trace of hemorrhage," and he stopped work. There was another trace four weeks later. He has not noticed fever and the dyspnea has been slight. He now weighs more than his average weight. The cough is not troublesome and the sputum is but slight in amount, mucoid, a little green in the mornings.

Patient has an anemic, cachectic appearance. The tongue is pale and has a slight white coat. His bowels are loose. His temperature 99.6° F.; pulse 82, full and soft. He has a long chest and there is distinct emaciation notwithstanding the fact that he weighs more than usual, there being marked sinking of the natural depressions, especially in the right supraclavicular region. Respiration is abdominal, 18 per minute, and moderate in excursion. Pulsations may be observed in both supraclavicular regions. The vocal fremitus is distinct throughout and exaggerated in the right supra- and infraclavicular regions. Percussion gives very marked dulness over the upper portion of the right lung, reaching from the apex to the level of the third rib anteriorly and the fifth vertebra posteriorly. There is decidedly diminished respiratory murmur in the right second intercostal space anteriorly. Above that, and to the right of the first and second vertebrae posteriorly, there are bronchial breathing and vocal and whispered bronchophony. The same are present in the right suprascapular region, except that the respiratory sound has a distinctly amphoric character. A few rather dry subcrepitant rales may be obtained on forced inspiration. There is cogwheel respiration in the left second and third intercostal spaces anteriorly. Generally the respiratory murmur is faint.

*Case IX.*—C. H., female, age thirty-seven years, a school and music teacher; was first seen December 21, 1899. Her father died of heart disease. Her mother was supposed to have had nasal catarrh; she did have a palatonasal per-

foration. Patient has always been subject to throat trouble. She had diphtheria at eleven, pneumonia (left) at twenty-two, and nervous prostration at thirty-five. This latter was accompanied by a hacking cough. In August, 1898, she caught cold, had the grip, and has been coughing ever since. She has had some fever with slight dyspnea. She had night sweats in the winter of 1898-99. Her present weight is about seven pounds below the usual. The cough is moderate, loose, and there is a moderate amount of yellow, stringy sputum. There was a trace of blood in the sputum in September, 1899.

Patient has a decidedly cachectic appearance. Her tongue is slightly swollen and is coated, especially on the right side. She has considerable thirst, and her bowels are loose. Her temperature is 100.4° F.; pulse 134, full and soft. The chest form is normal and there is but slight emaciation. The respirations are abdominothoracic, quiet and easy. Arterial pulsations may be seen in the neck. The vocal fremitus is exaggerated in the right side, diminished in the left. There is marked dulness over the right lung, reaching from the apex to the fourth rib anteriorly, and the angle of the scapula posteriorly. There is roughened breathing with exaggerated vocal resonance throughout the area of dulness, and throughout the rest of the chest there is puerile respiration. In the right supraclavicular region bronchial breathing and bronchophony are to be heard. No râles could be elicited in any part of the chest. Patient died in about a year.

*Case X.*—J. W. H., male, age forty-four years, a stage setter; was first seen by me November 15, 1899. There had been no lung trouble in his family for three generations. His only sickness had been pneumonia (right) in 1894. He was a periodical drinker.

In April, 1899, he caught a severe cold and began to cough and have pains in the chest. Under creosote the pains disappeared, but he began to lose weight and strength and have night sweats and impaired appetite. He has lost about forty pounds in weight. He has daily fever, with chills, and since coming to Colorado in July has had dyspnea. He had one moderate hemorrhage on the way to Colorado, none before or since. His cough is troublesome and there is considerable thick, solid, white sputum.

Patient has a hectic flush and a decidedly cachectic appearance. The temperature is 101° F.; pulse 113, full and of only moderate tension. The chest form is normal and there is moderate emaciation. The respiration is abdominothoracic, shallow, 40 per minute. The vocal fremitus is distinct throughout and exaggerated throughout the right chest. There is marked dulness on percussion over the right lung from the apex to the fourth rib anteriorly and to the sixth rib posteriorly. Throughout the area of dulness there is either roughened or tubular breathing, with increased vocal resonance. Whispered bronchophony can be obtained in the right

second intercostal space anteriorly. A few subcrepitant râles can be heard in the right supraspinous region. Patient died in about three months, a year from the first appearance of symptoms of his disease.

*Case XI.*—S. S., male, age twenty-seven years, laundryman; was first examined March 26, 1901. The family history was negative as far as tuberculosis is concerned. For the past ten years patient has been subject to periodical attacks of diarrhea, recurring every six to twelve months. Patient began to cough about a year ago, but has expectorated but very little, and that at night and in the morning. He has lost weight and strength, and has had fever, night sweats and dyspnea. Patient is anemic and cachectic in appearance and his fingers are markedly clubbed. He is round-shouldered and his chest is flat. Emaciation is distinct and there is marked sinking of the natural depressions. The lymphatic glands above the right clavicle are enlarged. Respiration is abdominothoracic, shallow, but regular. The vocal fremitus is increased over the right apex. There is percussion dulness in the left supraclavicular region and over the right lung from the apex to the third rib anteriorly, and to the fourth rib posteriorly. The respiratory murmur is very generally faint on ordinary respiration. Fine inspiratory subcrepitant râles may be heard throughout the area of dulness on the right side on coughing. Bronchial breathing on forced respiration and vocal and whispered bronchophony may be obtained on the right side from the supraclavicular region to the second rib anteriorly and in the supraspinous region posteriorly. A trace of cavernous percussion note can be elicited in the right supraclavicular region. Patient has speedily grown worse and has now given up hope.\*

*Case XII.*—D. A., male, age thirty-six years, watchmaker; was first seen by me January 10, 1901. His family history was negative. Patient had had pneumonia at twenty-one, from which he had fully recovered. His present trouble began December 26, 1899, and was brought on, he thought, by overwork. He began to lose weight and strength and have some cough. His present weight is 125 pounds, it usually being about 140 pounds prior to the present affection. He has fever, night sweats and dyspnea. He has never had any hemorrhage. His cough is troublesome and he expectorates a considerable amount of white, frothy sputum. His expression is unhealthy. He has an elongated, flattened chest, markedly emaciated, showing marked sinking of the natural depressions of both sides. His respirations are 32 to the minute, chiefly thoracic, shallow and a little labored. The cardiac impulse is visible in the third, fourth and fifth intercostal spaces in the precordial region. The vocal fremitus is distinct but symmetrical. Percussion reveals dulness over both sides of the chest as low

\* Patient died the last week in December, 1902, since the writing of this paper, a little less than three years after the onset of the disease.

as the third rib anteriorly and as low as the fifth vertebra posteriorly on the right side and the seventh on the left. A cracked-pot note may be obtained in the left third intercostal space at the mamillary line. Bronchovesicular breathing is found in the right apex above the first rib anteriorly; elsewhere the respiratory murmur is diminished. A few subcrepitant râles may be heard throughout the area of dulness, but only on forced respiration or coughing. A case of early considerable involvement of both lungs with bad prognosis.

*Case XIII.*—G. S., male, age thirty-nine years, painter, came to me May 9, 1900, five days after his arrival from New York. His family history was negative. He had had typhoid fever seventeen or eighteen years ago, and right-sided pneumonia two weeks later, being sick two or three weeks each time. He had had no other sickness that he could remember. Ten weeks prior to coming to me the patient had had the grip, but continued to work. He had some fever and coughed a little. In a few days he seemed to be entirely well, but about a month later hoarseness began to develop. This increased steadily so that in about six weeks he was almost aphonic. In a period of two months he lost thirteen pounds in weight.

For a week before coming to Colorado he had had night sweats and, for the last eight or ten days, some fever. He had no dyspnea before his arrival here. During the last two weeks his cough had been troublesome and he expectorates a moderate amount of white or a trifle greenish sputum. Patient has a slight hectic flush and the appearance of a man with a slowly wasting disease. His tongue has a white coat with a red tip. His temperature is 99.8° F.; pulse 112, soft and full. His chest form is normal and there is but slight emaciation. His respirations are thoracic, 25 per minute and shallow. The cardiac impulse is visible in the fourth and fifth intercostal spaces at the mamillary line and for about an inch within. Percussion shows marked dulness anteriorly on the right side from the pulmonary apex to the level of the third rib and on the left side above the first rib. Posteriorly the dulness extends as low as the fifth vertebra on the right side and the fourth on the left. The respiratory murmur is generally faint. Sonorous and crepitant râles may be heard in both supraventricular spaces. Sonorous râles occur throughout the chest. Creaking sounds obtain in the right supraclavicular and mammary regions. Bronchial breathing and whispered bronchophony may be elicited in the right supraclavicular and supraventricular regions and in the first intercostal space just to the right of the sternum.

This is, evidently, the most rapidly progressive of the cases cited and there may be some room for doubt as to its exact classification. I believe, however, that it may be properly placed in the company to which I have assigned it.

*Case XIV.*—A. B., female, age twenty-seven

years, housewife; was first seen January 17, 1899. There was no history of pulmonary disease among her blood relatives, but her husband is tuberculous and was so prior to the development of her illness. Her own health had been good until five years ago, since which time she has had periodical attacks of pains above the groins which she ascribed to her ovaries and which have almost always been accompanied by vomiting. In August, 1898, when in a weakened condition, she had an attack of sore throat\* with swollen tonsils accompanied by high fever and cough. There were also slight hemoptysis and night sweats. Great loss of strength was also present. When the acute symptoms subsided convalescence was not perfect. She fell into the hands of an irregular practitioner whose great hobby is "diet," which with him, so far as I can learn, consists principally of starvation. When the patient came to me there was daily fever with severe night sweats and dyspnea on slight exertion. The cough was troublesome, especially at night, and was accompanied with the expectoration of copious white, frothy and yellowish, thick sputum. She was cachectic in appearance. The tongue was coated and there was a decided tendency to looseness of the bowels. Her temperature was 100.8° F.; pulse 115, soft and of moderate volume. Patient's chest was slightly pigeon-shaped and there was a moderate degree of emaciation. There was sinking of the infraclavicular spaces, especially of the right. Respiration was chiefly thoracic, 33 per minute, regular and not labored. The vocal fremitus was distinct but symmetrical. Throughout the right chest there was exaggerated percussion resonance and also increased vocal resonance. In the left chest there was marked dulness in the supraventricular region, also anteriorly from the apex to the third rib except in the first intercostal space where there was a cracked-pot sound. In this latter region and extending downward along the sternum into the second intercostal space were also cavernous breathing and vocal and whispered bronchophony. There were no râles.

As is usually the case, there were intermittent periods of care and carelessness on the part of the patient. The disease gradually but steadily progressed until the entire left chest was involved. September 12, 1900, the dulness extended as low as the fifth intercostal space anteriorly and the angle of the scapula posteriorly. At that time numerous rather dry subcrepitant râles were present throughout the left lung.

The husband, not being content with my repeatedly expressed bad prognosis (expressed to him, not the patient) consulted another physi-

\*At that time there was in Denver an epidemic of infectious sore throat which some of the members of the profession regarded as grippal in nature. I saw sixteen cases in one house, one of them resulting in tonsillar abscess, another in cervical abscess. Another case seen in consultation developed a malignant endocarditis with a septicemia, the termination being fatal. Several cases of septicemia were noted in this epidemic having their origin in the pharyngeal infection. This goes to show that the infective pharyngitis mentioned in Case XIV probably had no relation to the pulmonary tuberculosis save to prepare the way for it.

cian who maintained that "as long as there was life there was hope" but the patient died in the middle of August, 1901, three years after the onset of the first symptoms.

The foregoing histories present a picture, I think, sufficiently characteristic. Too chronic to be assigned to either of the forms of acute pulmonary tuberculosis (the disseminate or the pneumonic type), they present a symptom-complex quite different from that of either chronic catarrhal pulmonary tuberculosis (Osler's chronic ulcerative form) or the fibroid phthisis.

As regards nomenclature,\* a suitable name is not just easy to obtain. Powell (*loc. cit.*) says "chronic tubercular phthisis seems to be the best clinical name for this variety, and one which at the same time indicates the pathological process." He also in his classification names it "chronic pulmonary tubercularization." Neither of these seems to me to be perfectly satisfactory, especially the latter term, for all forms of chronic pulmonary tuberculosis, whether of the type under discussion or the catarrhal or fibroid varieties, are equally well designated by it. Where I obtained the name forming the title of this paper I do not know. Possibly I may be responsible for it myself. It is evidently used to contrast this with the catarrhal and fibroid forms. It is, however, not much, if any, better than those used by Powell. In all forms the parenchyma is involved and in the present form all of the pulmonary structures are equally affected. We might use the term pan-pulmonary tuberculosis but it is open to the objection that wherever tubercles occur in the lungs all structures are involved and that it might be held to imply that the entire lung is affected. A suitable term for massive, progressive involvement I am not at present prepared to give.

In conclusion I would sum up that this form of pulmonary tuberculosis is worthy of special attention and recognition for the following reasons:

(1) It is a perfectly characteristic type of pulmonary tuberculosis, distinctly different from those generally recognized. (2) It is constant in its progress and bad in its prognosis. It is scarcely less fatal than phthisis florida though its duration is longer. (3) It is very insidious, and this tends to cause error on the part of the physician and a mistaken sense of security to both patient and medical adviser. (4) The preceding two reasons render its early recognition of great importance to both physician and patient.

\*I wish to emphasize more than is done in the body of the paper my recognition of the fact that the term parenchymatous as applied to this form of the disease is not a satisfactory one. There is no such thing as a pure interstitial pulmonary tuberculosis, yet the name is very generally applied to that type of disease often called "fibroid phthisis." This is the one form in which the name most clearly corresponds to the predominating anatomical condition. There is also no such thing as a strictly catarrhal tuberculosis. That name, however, is used without objection for Osler's chronic ulcerative type, although in this the deviation from the anatomical condition expressed by the term catarrhal is very great. No more does a strictly parenchymatous form of the disease exist. I do not attempt to defend the name on that ground. As said in the body of the paper, it was used evidently (and by whom first I do not know) to contrast clinically this form from the other two well-recognized types.

## SPINAL CORD INJURY, SO-CALLED CONCUSSION OF THE CORD.\*

BY FRANK PARSONS NORBURY, M.D.,  
OF JACKSONVILLE, ILL.;

PHYSICIAN-IN-CHARGE MAPLEWOOD SANATORIUM FOR NERVOUS AND MENTAL DISEASES; NEUROLOGIST TO OUR SAVIOUR'S HOSPITAL; CONSULTING PHYSICIAN TO ILLINOIS INSTITUTION FOR THE EDUCATION OF THE BLIND.

It is unfortunate that a truly scientific interpretation of concussion of the spinal cord has not yet been attained. As a result more or less controversy exists as to its real merits and its true pathology. It is a term that has become established by long usage and even in the light of modern pathology thus far no term has been accepted which fully covers the clinical picture which it aims to represent. As experience is accumulated in the observations of such cases and as neuropathology becomes more exact, it is to be hoped that this disputed condition in neurologic medicine may become more defined. From my own observation and study of the literature, I have concluded that the underlying lesion, in so far as the cord is concerned, is disturbance of the circulation and injury to the blood vessels and lymphatics. Hemorrhage is, I believe, the lesion and this hemorrhage is into the substance of the cord (intramedullary). In support of this we have, on the surgical side of the controversy the observations of Kocher, made with his characteristic originality, those of Thorburn and also the observations of Horsey who as a neuropathologist as well as a surgeon stands preeminent. Then the work of Charcot, Oppenheim, Dana, Walton, Strümpell on the side of the neurologists, most of whom are inclined to view the structural changes as probable. Other observers, notably Wagner and Stopler, lean toward this belief. Neurologists, however, have varied views, some of which are essentially hypothetical. Most of them agree that degenerative changes or secondary vascular changes are responsible for the symptomatology of the disease. In support of this view of hemorrhage, facts seem to be accumulating that are both tenable and reasonable.

Many injuries to the spinal cord have no external evidences of injury to the spinal column. The column itself is intact and injury to the cord is due to the traction put upon it by the violence of the accident or to severe contusion. The symptoms which follow, many of which are slow in appearing, indicate structural changes occurring in the substance of the cord or to irritation arising from meningeal involvement. In pronounced cases of hemorrhage the symptoms are those of sudden interruption of the functions of the cord and the varied sensory and motor changes soon enable a diagnosis to be made. The localization of the lesion usually can be outlined. The progressive degenerations, which sooner or later follow, serve to more fully establish the diagnosis and the seat of the lesion. In the less extensive lesions the symptoms may vary, and by reason of the fact that hemorrhage may disappear, the continued in-

\* Read before the Mississippi Valley Medical Association, Kansas City, Mo., October 15, 1902.

terruption of cord function is rare. Sometimes this fact confuses the diagnosis but ordinarily it should not, but, on the contrary, should be accepted as evidence of the previous existence of hemorrhage. In the obscure cases which have latent symptoms and slow convalescence the lesions have been less pronounced and probably in regions where the functional activity is less liable to be influenced by hemorrhage.

Certainly in the so-called cases of chronic traumatic neurasthenia, which are slow in development, we have some evidences of functional impairment not unlike those noticed in cases of hemorrhage where the diagnosis is not questioned. For this reason we have a comparative basis at least, for reasoning that in concussion of the cord, which is only a part of chronic traumatic neurasthenia, we have some evidence that hemorrhage is the lesion for special interference with activity of the spinal nerves. I have noticed system symptoms in one case where the sensory changes were limited to one side and vasomotor symptoms, also unilateral, all of which lead me to believe that the original lesion was intramedullary and probably hemorrhagic. The root symptoms in this case were noticed at the beginning, showing irritation which may have been meningeal but late root symptoms, also noticed in this case, may have been from degeneration of the cord.

Brunn and Worscheid call attention to a fact due to the anatomical peculiarity of the origin of nerve roots. "That in otherwise serious lesions those nerve roots which merely pass by the injured cord to reach their point of emergence from the spinal cord and which, for instance, in the dorsal portion of the vertebral canal are derived from segments considerably above the seat of the injury are well preserved; while, *a priori*, it would be assumed that these roots, lying as they do particularly close to the injured cord, would be more liable to be affected than the cord. In general the roots are more resistant than the cord and this not only with reference to traumatic lesions; to be sure their power of resistance does not go beyond a certain limit; when the trauma is very forcible, they are likewise torn."

Hemorrhage is common in traumatism of the cord. Oppenheim states that fully nine-tenths of the cases of traumatic injuries to the cord have hemorrhage as a factor in the production of symptoms. Falls on the head or violent throwing of the body forward, striking upon the head, as in railroad accidents, causes a bending of the body, near the cervical-dorsal junction, strains the cord and thus causes hemorrhage, without any evidence of injury to the spine itself. The hemorrhage is in the gray matter of the cord, as is shown by the symptoms, viz., involvement of the posterior horns, also the anterior horns, or both. In pronounced cases the hemorrhage usually diffuses longitudinally, producing system symptoms. Dr. Black had one such case which beautifully illustrates the progress of the

diffusion of the hemorrhage by the progressive evidences of sensory involvement. In this case there was no question as to the diagnosis, but, in cases not so pronounced at first but which weeks later show progressive system symptoms, are we not justified in believing that hemorrhage existed? I see no reason why tubular hemorrhage cannot occur slowly and by degrees as well as rapidly.

Take the cases where brachial symptoms are slow in development, is it not possible that hemorrhage has occurred in lower cervical regions? Or the more common cases where irritation with paralysis occurring later, in which the bladder and rectum are involved, that hemorrhage has occurred in the lumbar region? I know these are well-defined cases and are not truly of the type classed as concussion of the cord, but they are nevertheless frequently called cases of concussion. In my judgment they give us a clue as to the conditions existing in the more obscure cases.

In comparing the symptoms as they appear in chronic traumatic neurasthenia with those of concussion we note a similarity, especially as regards the sensory and vasomotor changes. For example; take the special senses—vision, which is interesting and worthy of exhaustive observation.

In traumatic injuries of the cord in the lower cervical and upper dorsal is it not unusual to have mydriasis, or narrowing, or immobility, of the pupil. Albert explains this by saying that the nerve center which controls the size of the pupil lies in this part of the cord and is therefore exposed to irritation. I have noticed this feature in one case of so-called concussion of the cord. Again, the subjective asthenopia, the misty field of vision and the sense of fatigue on using the eyes. Also, photophobia, in consequence of which the patients want to remain in the dark. The subjective symptoms, however, wherever found, usually belong to the pure neurasthenic cases, where the brain symptoms, so obscure in their pathology, predominate. We are not yet safe enough in our advancement in neuro-pathology to claim that neurasthenia has or has not a structural basis. The mental element in these cases rules the phenomena of the disease but withal we find many symptoms which can be explained by circulatory changes.

It is impossible, in the study of concussion of the cord, to eliminate the psychical element—that element which eventuates in the development of traumatic neurasthenia. The importance of recognizing the definite and demonstrable symptoms is evident because frequently the subjective symptoms coming on suddenly completely obscure the real, the objective symptoms. The symptoms which come on gradually and are sufficiently pronounced to be a source of disturbance to the patient, are the ones which in my judgment proclaim the hemorrhagic origin of the disease. The pathology of this condition, while more or less speculative, is nevertheless leaning toward

the hemorrhagic theory. Nervous diseases, for many years said to be functional, are, in the light of modern inquiry, looked upon as due to organic changes, be these changes ever so minute and so, in concussion of the cord, I am sure will, as the research work goes on, be demonstrated beyond question to be due to hemorrhage or circulatory changes affecting in some way the minute structure of the cord.

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## REPORT OF A CASE OF MONOCULAR INFERIOR HEMIANOPSIA.

BY E. S. SAYLOR, M.D.,  
OF PHILADELPHIA.

MISS X., aged seventy-seven, school teacher. She has always been a well woman with the exception of a marked tendency to faint and several severe attacks of rheumatism.

On September 15, 1900, she fainted and, in falling, struck her head against a heater which produced a large wound with profuse hemorrhage and swelling of the surrounding tissue. She has never bitten her cheek or tongue in one of these attacks. There is now a depressed scar at the site of the wound which corresponds to the motor center for the leg and arm (Fissure of Rolando).

Two weeks later (Sept. 28), while adjusting her bonnet, she turned her head, not suddenly, to look in the glass when she experienced a flash of light followed by a dimness of vision in the left eye. Later she discovered that, when looking directly at an object and then closing the right eye, she saw but the upper half of the object. She describes the dimness as a thick cloud or veil. She has experienced no pain nor noticed any inflammation in the eye at any time. When I saw her for the first time after the dimming of vision, which, by the way, was five weeks later (Nov. 7, 1900), I made the following notes:

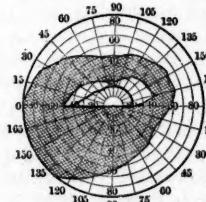
Right eye, vision,  $5/7.50$  corrected  $5/5$ . Lower half of bulbar conjunctiva congested (this she informed me had existed since childhood and that many oculists had endeavored to remove it by medication). Cornea clear with the exception of a barely perceptible arcus senilis. Pupil small—2 mm.—almost round reacting promptly to light and distance. Anterior chamber of normal depth. Lens, slightly hazy. Vitreous clear. Disk oval with long axis at 90, a little grayer than normal—no retinal changes. Tension—normal. Left eye, vision =  $2/45$ . Cornea clear, no disturbance of sensation. Anterior chamber somewhat shallow. Pupil oval and slightly larger than its fellow—3 mm., and reacts promptly to light and distance. Lens swollen and hazy, striations marked in periphery. Vitreous clear. Disk probably a little prominent especially the upper half and is of a yellowish hue. No cupping at any point.

Both arteries and veins are smaller than those of the fellow eye but there is very little if any difference between the superior and inferior vessels which can be followed to their remotest ramifications. Retina is not detached at any point, but gives the impression of being a little hazy. No red spot can be seen at the fovea nor any macular change whatever. The column of blood is not broken in any vessel. No pulsations can be detected. Tension—normal.

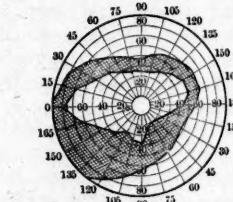
The right visual field is concentrically contracted for form and color. The left field is limited to the upper half, which is, itself, very much contracted—the extreme points being as follows:

Fifty to the temporal side, 25 above, 40 to the nasal side and the horizontal meridian as the lower boundary, (see chart and notice that the line runs directly through the fixation point), the fields for red and green being almost as large as the form field, and are concentric.

Examination of the urine showed no trace of sugar or albumin but an excessive amount of uric acid. Heart sounds are normal, pulse good, arteries not so hard as one would expect con-



Form field taken Nov. 7, 1900. Field for red indicated by black line.



Form field taken Nov. 27, 1900.

sidering the age of the patient. There is, however, slight edema of the ankles.

There has been no uncertainty of vision or headache at any time previous. In fact the patient does not know what a headache is, having never had one. The injury to the head in my estimation has nothing to do with the case unless to precipitate the trouble.

Of course our first thought is of embolism of the superior branch of the central artery of the retina and of detachment of the same. But there are no signs of either of these.

Cortical disease I considered out of the question, owing to the regularity of the limiting line below, the trouble being in only one eye, and the fact that I could get no reaction of the pupil when throwing a minute ray of light on the blind half of the retina (Wernicke test).

I finally arrived at the conclusion that it must be a retrobulbar neuritis of rheumatic origin and administered the salicylates with the gratification of seeing the vision rise rapidly from  $2/45$  to  $5/12$ . The field increased very markedly also. On November 27, 1900, the points were as follows: Temporal side, 80, above 35, nasal side 50 and below 35. Later I ordered hydriotic acid and strychnine, corrected the refractive error and obtained  $5/6$  vision.

**HYDRAGOGIN—SOME OBSERVATIONS UPON ITS  
USE IN DISEASES OF THE HEART  
AND KIDNEYS.**

BY M. LOEWENTHAL, M.D.,  
OF BROOKLYN, N. Y.

NEW remedies are being forced upon the profession faster than their names can be committed to memory, and it is no wonder that the busy doctor justly ignores many of these new drugs, until those clinicians, whose work and opportunities favor experimentation and investigation, have determined the just and practical value of any one drug and separated the products of real efficacy from the worthless—"have gleaned the wheat from the chaff." The old adage of "*proving all things, holding fast to that which is good,*" cannot be applied in private practice, for the man who intends to carry out this precept, by trying every new remedy proposed will frequently have cause for regret, and his patients will often find it to their advantage to seek advice elsewhere.

Hydragogin is one of the newer remedies tested thoroughly in clinics abroad and with very satisfactory results. Results which fully establish its merit and warrant its general use and the further study of its properties in detail. This preparation was first introduced to the medical profession of Germany with warm commendation by Dr. K. Goldberg of Berlin, who in a paper\* advocates its use in cases in which a reliable diuretic is necessary—Dr. Goldberg obtained very favorable results in more than one hundred cases, and in some cases surprisingly favorable results after all the known diuretics had been tried in vain. Other noted observers impressed with the results obtained by Dr. Goldberg, took it up and cited their experiences in many journals in the old country. In this country, the inundation of so many foreign drugs along with hydragogin never gave the latter the recognition which it certainly deserves. In 1899 Dr. Speier of Janesville, Wis.,† suggested that hydragogin be given a thorough trial.

Before entering upon a consideration of the therapeutic value of this remedy, let us direct our attention for a few moments to the study of its composition and the arguments to be drawn from the standpoint, of why it should be a remedy of value to the physician. Hydragogin is put up in 15 gram bottles, containing 1.5 gram tincture digitalis and 2.5 gram tincture strophanthus. The other ingredients entering into the compound are scillipikrin and scillitoxin, the active principles of scilla maritima. To this is added 0.5 grams of oxysaponin, an extract from herniaria glabra, a gray, amorphous powder, with pungent, irritating odor. Given by itself, oxysaponin is slightly diuretic and causes thin, watery discharges from the intestines. Hydragogin on the contrary constitutes a diuretic much more active than any one of the ingredients singly, or any combination of them without oxysaponin. From observations

made by Privatdozent Dr. Borutta at the Physiological Institute at Göttingen, hydragogin is not very toxic, whether administered by mouth or hypodermatically. In frogs, the heart is arrested in systole. In warm-blooded animals, large doses produce fatal results after marked increase of blood pressure. Section of the vagus caused slowing of the pulse; with the vagus intact, the heart's action is accelerated. Diuresis is markedly increased, and in rabbits also thin, watery stools were caused.

I will now discuss the therapeutic advantages to be derived from the administration of hydragogin. I can do no better than cite a case which came under my treatment on Jan. 2, 1902.

*Case I.*—Mr. George H., aged forty-three years, a commercial traveler, developed nephritis after exposure to malarial influences during a business trip in South Carolina. Not feeling so very badly, he proceeded on his way home, but at Richmond, Va., he was compelled to seek advice, as his condition grew worse. A letter from Dr. R., of Richmond, gave me the following history: The patient's urine was smoky, variable in quantity, containing about one-seventh of its volume of albumin, with hyaline and granular casts. There was general edema, with consequent dyspnea, spasmodic breathing, interference with heart's action, and pains in the limbs. He improved under treatment sufficiently to be removed to his home in Brooklyn, but the fatigue of travel proved too much for him and he arrived in a state of extreme prostration. I was called to see him on Jan. 2 and found his heart acting feebly and tumultuously, beating 130 to 150 per minute; pulse scarcely perceptible at the wrist; temperature normal; pinched features; eyes pearly; dull yellow skin; surface cold; clammy sweat; broad tongue, moist, pale and cold to the touch; great precordial distress; dyspnea; excessive restlessness; moaning; hiccough; distention over lower pleura; tumid abdomen; absolute and complete suppression of urine and incessant violent retching and vomiting. Diagnosis, chronic diffuse nephritis. I had the patient placed in a hot bath, dry cups over the loins, and the abdomen enveloped in hot turpentine stupes. Jan. 4, I again saw him. He had not improved very much, so, in addition to the above treatment, I now prescribed hydragogin in 10-drop doses every two hours, with a diet of boiled milk and lime water, to be repeated as often as it was vomited. This treatment, which also established catharsis, was persisted in with such modifications as circumstances required. The irritability of the stomach gradually abated on the restoration of the secretion of urine (Jan. 8).

Hydragogin was then given in 15-drop doses every three hours, and the symptoms continued to abate in severity. On April 1, his urine was found to have a specific gravity of 1.022, was slightly acid, and daily averaged 36 ounces; no casts, and not the slightest trace of albumin were discernible. Improvement had been rapid. His flesh had become firmer and of rosier color, all

\* Verhandlungen des XVII. Congresses für Innere Medicin.

† Wisconsin Medical Recorder, Dec., 1899.

puffiness had disappeared from the face, and all swelling from the lower extremities. Some abdominal distention remained. Of course, the diffuse nephritis was not cured, but all untoward symptoms had subsided. The remarkable results achieved in the treatment of this case led me to prescribe it in other cases, of which the following may be interesting:

*Case II.*—William McG., Scotch, sixty-five years of age, park laborer. I was called to see this patient Jan. 15, 1902. His history is as follows: Two months ago he had an attack of rheumatism in left knee and hip. These joints swelled up, became exquisitely tender, but not red; feet have been swollen more or less for the past year and a half; he has passed urine in only small quantities for the last seven months; he is troubled occasionally with headache in the frontal region; has lost his appetite, is dyspeptic and has cardialgia at times. On the slightest exertion he has a fluttering about his heart, with slight precordial pain, blueness of the lips, and dyspnea. He has chronic bronchitis, with thick mucopurulent expectoration, which has been troublesome for four months. Bowels much constipated, with movements only once or twice a week. He has been a hard drinker for years and often drinks before breakfast, and on an empty stomach during the day. He has had a chancre, but no secondary symptoms.

When I first saw him, on the above date, he had extreme anemia; conjunctiva and other mucous membranes, as well as the skin, almost white; tongue flabby, but not coated. He complains of great weakness and pain in the stomach and in right leg. He has edema of both legs, thighs and in the cellular tissue of the abdominal walls, with moderate ascites. Temperature normal, pulse 83, very weak, intermittent and irregular; respiration 24; much cough with fine râles. Heart, increased area of dullness, weak impulse, no murmurs. Prescribed pulv. jalap. co. gr. xxx, with hydrarg. chlor. mite gr. v. Jan. 17, 1902. Ordered hydragogin gtt. x every three hours.

Jan. 19, 1902. Saw patient at 11 A.M. Pulse 80, stronger, less irregular or intermittent. Urine, 13 ounces; sp. gr., 1.022; no albumin. Treatment continued.

Jan. 21, 1902. Pulse 76, stronger. Urine, 32 ounces, sp. gr. 1.022. Treatment hydragogin gtt. x every four hours. Jan. 23, 1902. Heart impulse stronger; pulse almost regular; urine, 35 ounces; sp. gr., 1.020. Treatment hydragogin gtt. x three times daily.

Jan. 31, 1902. Urine, 40 ounces; sp. gr., 1.023. Feb. 8, 1902. Urine, 37 ounces; sp. gr., 1.022; traces of albumin. Prescribed hydragogin gtt. xii every 2½ hours. Feb. 16, 1902. Patient up and around his room, feeling very well; urine, 34 ounces; sp. gr., 1.024; pulse 70, full and regular; hydragogin stopped and patient put upon a ferruginous tonic.

It can readily be seen here of what advantage this remedy proved to be in this case of cardiac dilatation with anasarca and bronchitis.

*Case III.*—Jennie W. R., aged fifty years, married. On Feb. 3, 1902, was called to her house and received the following history: Five weeks before, the patient noticed that her feet were much swollen, and that her urine was scanty and dark-colored, and her appetite completely gone. At the same time, her heart troubled her more than ever. She had suffered for several months with vague pains and palpitation in region of the heart, with sense of suffocation and shortness of breath. She had symptoms of a chronic bronchitis for a long time previously. Five years before, had a sub-acute attack of rheumatism. Gives also a history of syphilis and hard drinking. She is dropsical all over body, with ulcers on her legs; extreme orthopnea; cyanosis extreme; pulse imperceptible. On examination, heart greatly hypertrophied and dilated; action extremely rapid and irregular; double murmur at base; single systolic murmur at apex; heart beats, 190; respiration, 48. Urine passed, about one pint all day, dark, 20 per cent albumin, containing urates; sp. gr., 1.028. Diagnosis, cardiac hypertrophy and dilatation; bronchitis; general anasarca. Prescribed hydragogin gtt. xv every three hours. Feb. 4, condition about the same; treatment continued. Feb. 5, cyanosis disappeared, edema less. Heart more regular, and intermits only every 20 beats, rate 115. Pulse can now be distinctly felt and is quite regular. Patient is able to lie down in bed. Urine, 23 ounces in twenty-four hours, light in color, albumin 15 per cent; sp. gr., 1.026. Part of urine is passed involuntarily. Treatment hydragogin gtt. xii every four hours. Feb. 7, heart is quite regular and much stronger, rate 85; edema has entirely disappeared from body, but not from legs. Urine, 28 ounces in twenty-four hours, albumin ten per cent, all passed voluntarily. Treatment continued to Feb. 15, when I ceased to make any more visits, as patient progressed so nicely. On Mar. 4, I was sent for, and found that gangrene had set in on ulcers of the leg, and patient desired to go to a hospital for treatment. I heard from her on April 11, stating that she was doing well.

*Case IV.*—Michael O'C., aged fifty-two years, Irish, laborer. Was called to see patient on Feb. 11, 1902. About a year previous I had treated the patient for dilatation of the heart; he had gotten relief and resumed work. He did comparatively well until four months ago, when he had an attack of pain in the region of the heart, accompanied by palpitation, dyspnea, vertigo, blueness of the lips and ears, and slight edema of the ankles. He had also an occasional dry, hacking cough, with watery expectoration. He was a moderate drinker. Had chancre about four years ago; no secondary symptoms. Had been vomiting for the last two weeks; has taken no food, not even milk. Has passed sufficient urine, and his bowels moved every other day, unless he took a cathartic, which was very seldom. No family history of cardiac or pulmonary disease. Had rheumatism six years ago; no cardiac symptoms. When I first saw him on Feb. 11, he appeared to be a well-

developed and well-nourished man. Has extreme dyspnea; breathing much accelerated, 50 to the minute; orthopnea; extreme cyanosis of lips and face. Cardiac action very much labored and weak; heart sounds indistinct; asystolism; heart irregular in rhythm and force; pulse imperceptible. Rate of heart, 150 to the minute. Edema of feet and abdominal cellular tissue, pitting slightly on pressure. Fluid in both pleural cavities. Heart much dilated, with diffused and feeble apex-beat. Slight mitral regurgitation and double aortic murmurs. Urine was sufficient in quantity, dark-red in color with sp. gr. 1.020, containing no albumin. Diagnosis: Cardiac dilatation, with anasarca; rapid action of the heart. Prescribed a purge of calomel and jalap, and then hydragogin gtt. xv every three hours. Feb. 12, feels easier. Feb. 13, heart's action much stronger, fuller, and very perceptible at both wrists, still irregular in force and rhythm, but less so than formerly; dyspnea and cyanosis less. He rests in bed, on a general diet. Urine, 40 ounces; sp. gr., 1.024, acid. Treatment, hydragogin gtt. x every four hours. Feb. 15, heart beats at the rate of 90 per minute, full and strong, but still markedly irregular in force and rhythm. Urine, 48 ounces; sp. gr., 1.024. Treatment same as day before. Feb. 16, 17 and 18. Improving, treatment continued. Feb. 19, pulse strong and full, compressible, but still irregular and intermittent, 72 to the minute; no dyspnea while lying in bed; urine same in quality, amount, 45 ounces daily. Prescribed hydragogin gtt. x every 2½ hours. Feb. 26, improving gradually; is very comfortable; no dyspnea or cyanosis; pulse 75 to minute; still irregular and intermittent, but much improved in strength and caliber; edema entirely gone. Hydragogin was now given in 10-drop doses every four hours. March 2, no dyspnea. Is up and about room. Urine sp. gr. 1.020, amber, acid, no albumin. Hydragogin in 5-drop doses three times daily was ordered. March 10, pulse still irregular and intermittent. Patient feels quite comfortable. Ordered him to increase hydragogin to gtt. x three times daily.

*Case V.*—Mrs. X., widow, aged forty-six years, to whom I was hurriedly called on Jan. 19, 1902, suffered from pain in precordial region for over one month; had also had palpitation and dyspnea and a mucopurulent expectoration, which had been only temporary. The pain in the heart often radiated to shoulder and back, and at times was quite severe, accompanied by fluttering sensations under the left nipple. Has suffered some from headache, and at times has had attacks of amblyopia, and often sees spots, black and white, before the eyes. Her urine has been very scanty and dark-colored, and she would go sometimes 24 hours without passing any. It contained a sediment. At the time her urine gets scanty, her feet swell to an immense size. She has suffered from dyspeptic symptoms for the last year and a half; never vomits, but suffers considerably from pyrosis and gaseous eructations. She has never had any acute sickness since childhood; takes

whisky regularly, sometimes in excess, often on an empty stomach. At times, when she is on one of her sprees, she does not eat anything for several days. I found my patient to be a very stout and apparently well-nourished woman. She has considerable cyanosis about the ears, neck and lips; extreme dyspnea, and much inclined toward somnolence; legs very edematous; arms and face much swollen. Temperature normal; pulse 135, small irregular, weak and compressible; urine dark-colored, and had passed about a goblet full in last 24 hours; sp. gr., 1.028; no albumin; has incontinence of urine and involuntary movements of the bowels. Very labored respirations (36); suffers also from nausea, can take only milk and lime-water. Examination showed hydrothorax with ascites. Increased area of dulness over heart, with diffused and feeble apex-beat. Double aortic and systolic murmurs, probably secondary to the dilatation and not to the valvular disease. Diagnosis: dilatation, Bright's disease; cirrhosis of the liver; anasarca, ascites, hydrothorax. I prescribed for her 35 grains of compound jalap powder with five grains of calomel. Jan 20, I gave her hydragogin gtt. xii every three hours. Jan. 26, pulse from 135 has gone down to 106, much stronger and regular; urine increased markedly, and though there is still incontinence, it is not so constant. The patient is much brighter and the somnolence lessened, though still present; her dyspnea is much diminished. Treatment continued. Jan. 30, patient felt so well that she got up and sat in a chair for an hour; the heart is much stronger in systole and more regular in force and rhythm; pulse strong, regular and full; urine increasing. Treatment the same. Feb. 4, the incontinence of urine and feces has ceased. Pulse continues strong, regular, and full; dyspnea has disappeared, and the edema also is entirely gone. Hydragogin was now given in 10-drop doses every four hours. Feb. 8, patient shows signs of relapse; the urine and bowel discharges again becoming involuntary. I prescribed tinct. belladonna gtt. xv, extract ergotae one dram three times daily, with 10 drops of hydragogin and two drops of nitroglycerin every three hours. Feb. 11, conditions the same; have increased the hydragogin to 15 drops. Feb. 15, no change. Feb. 21, patient much the same. Feb. 26, died; was conscious to the last.

In remarking about this case, the relief from suffocation and the disappearance of the anasarca were, at first, as marked as in any of the other preceding cases, but, besides the cardiac changes, there was advanced Bright's disease with cirrhosis of the liver, and therefore, ere long, any remedy whatever would probably have failed.

In the remedy, hydragogin, the profession without doubt has received a great addition to the list of cardiac stimulants. It is not my province to enter again into the details of the properties of this preparation, except in so far as to state that for functional derangements, like palpitation, I know of nothing superior to it; and that it has a particular effect to increase the power of the

heart's contraction in a more regular and uniform, though not in so powerful a manner as digitalis alone does. But in increasing the specific gravity of the urine in chronic Bright's disease, the power of hydragogin is much greater than that of digitalis. I have never, in fact, succeeded with any other drug as with hydragogin.

But it is in severe cases of acute diseases that we meet with the most signal illustrations of the advantage of the combined action of cardiac remedies as presented in hydragogin. To prevent heart failure until the patient can tide over the crisis, becomes frequently the anxious problem in pneumonia, in sudden prostrations in fevers, in peritonitis, when the effect of shock in causing general arterial closure is so plain as a cause of cardiac exhaustion, and in many other like conditions; and I have no doubt many practitioners will welcome some addition like this to the regulation brandy and ammonia prescription for such emergencies.

A few remarks as to the mode of administration of hydragogin will conclude this paper. The physician must be guided by the individual patient and not prescribe in each and every case the same dosage. One patient can take 15 or even 20 drops hourly, another will complain of nausea after the ingestion of the second or third dose of five drops. I generally begin with 10-drop doses every two or three hours, but if nausea, weakness, copious dejections from the bowels, or intoxication occur, I suspend the remedy for 24 hours, then begin again. The diet should consist only of milk and water while hydragogin is being given. In my experience, patients suffer no ill effects while taking hydragogin, and any annoying by-effects can certainly be avoided, if it is given diluted with four to six ounces of some reliable mineral water.

#### THE USE OF NORMAL SALT SOLUTION.\*

BY HARRY FRENCH THOMPSON, M.D.,  
OF BUFFALO CENTER, IOWA.

IN calling attention to the use of normal salt solution, I expect to add little if anything to what has already been said on the subject. It is a procedure that is being used by medical men wherever medicine is practised. Its field is a wide one, and one which becomes wider every day.

Transfusion of blood is a procedure of very ancient date, but after repeated trial, it was discarded as being unsatisfactory. The use of saline solutions was first proposed by Cantani, in 1865, who recognized in it a valuable procedure in cases of severe hemorrhage. It was later found to be of value in profound shock and collapse. Since the discovery of bacteria, and the recognition of the toxins generated by them, it has been found to be of great value in cases suffering from their evil effects. It is now being used daily, in typhoid fever with and without hemorrhage; in pneumonia; dysentery; puer-

peral eclampsia; peritonitis; blood poisoning and, in fact, in any and all diseased conditions associated with either severe hemorrhage or intense toxemia.

In cases of hemorrhage, it replaces the fluid lost to the tissues and refills the blood vessels, thereby giving the heart something on which to work. It stimulates the cardiac ganglia, sustains the nutrition of the heart itself, rendering it possible for the remaining blood to be propelled to the vital centers and sustain life temporarily until new blood can be formed. It raises the temperature to normal and relieves collapse.

In toxic conditions, such as eclampsia, septicemia, uremia, ptomain poisoning, etc., it excites diaphoresis and diuresis, lowers the specific gravity of the urine, increases phagocytosis, dilutes the poison circulating in the blood stream and, by a process of cell lavage, removes the toxin from the paralyzed cell, allowing it to resume its normal function. By its diaphoretic and diuretic action, it removes the generated toxins from the system.

The term "hematocatharsis" has been aptly applied to this action by Dr. E. Houel, who, in *La Revue de Therapeutique*, concludes "that the intravenous and subcutaneous use of normal salt solution is of value, not only in self-limited diseases, but also in such conditions as have already been mentioned, septicemia, etc. Dr. H. N. Moyer, speaking editorially in *Medicine* (Sept., 1901), says, "The use of normal salt solution in the treatment of toxemias will, unquestionably, play an important part in the future."

The results obtained by the use of this procedure are sometimes little short of miraculous. In cases of severe hemorrhage are the results especially marked, because of the promptness with which it acts. In this connection C. H. Anderson reports in *Medicine*, Sept., 1900, a case of typhoid fever treated by him, in which there were five separate hemorrhages, all of which were treated with normal salt solution. The patient, a corporal in the late war with Spain, was admitted to his service, at Fort Monroe, after having been sent from Chickamauga to Newport News, and from there to the general hospital. On the 26th day after admission the temperature was 106.2° F. at 5 P.M.; at 2 A.M. the following day the temperature suddenly fell to 98.5° F., leaving the patient in a state of collapse. On the administration of one-tenth of a grain of strychnine, he had a copious bloody stool. A quart of hot water with two teaspoonfuls of sodium chloride was hastily put into a fountain syringe, an ordinary eye dropper point attached, an opening made in the median basilic vein, the point introduced, the bag elevated three feet and the whole quart injected in about 20 minutes. He was wrapped in blankets, brandy administered by the mouth and ether hypodermically. He rallied nicely and at 8 o'clock the next morning he seemed to be in better condition than he had been before the hemorrhage.

\* Read before the Winnebago County Medical Society.

On the thirty-first day at 3 A.M. he had another severe hemorrhage, with conditions about as before. At this time about three pints of normal salt solution was administered as before. The patient rallied well, and was treated as before, with whisky and ether. At 9 o'clock the next morning patient was conscious and asked for something to eat. Temperature 101.4° F. Evening temperature 102.6° F. During the next four days the temperature ranged from 101.2° to 104.3° F.

On the thirty-fifth day at 8 A.M. he had another hemorrhage, and nurse reported that she thought he was dead. He was given strychnine 1-20 and an ether injection. No pulse could be felt at the wrist. He looked like a corpse. He received a quart at a temperature of 114° F., when poured from the pitcher into the bag. He did not rally as well as before and at 11 A.M. was given another quart as before. This seemed to have the desired effect.

On the thirty-ninth day he had a small hemorrhage from which he recovered with salt solution by the bowel every four hours. On the forty-seventh day he had another hemorrhage and was transfused with a quart by the same vein. From this time the patient steadily improved, and with the exception of several abscesses, due, Dr. Anderson thinks, to the fact that the water had not been filtered, made a good recovery. He was discharged Nov. 19 a thoroughly well man.

J. H. Warbassee, in the MEDICAL NEWS, March 2, 1901, reports using normal salt solution in delirium tremens. The patient, a man aged thirty years, had been a habitual user of alcohol. After sustaining a fall from a wagon resulting in several bruises and contusion of the side of the head and abdomen, he developed transient cerebral symptoms which later became more marked, until on the third day when the temperature rose to 104.2° F., with violent delirium. He became rapidly worse until the fifth day his skin was cyanotic. He was covered with a cold perspiration, delirium of the low muttering type. The case gave every appearance of early dissolution. He was given 1,200 c.c. of normal salt solution at a temperature of 116° F. in the median cephalic vein. Under this treatment circulation rapidly improved, delirium subsided and the patient regained consciousness in a few hours. Temperature the following day was 99.6° F. Recovery was rapid and uneventful.

Epstein, of Germany, practises the subcutaneous use of normal salt solution in acute digestive disorders and cholera infantum. He reports prompt improvement and quick cures in cases apparently hopeless. He uses 2½ drams at a time, hypodermically.

Dr. Hunter Robb, in the *Railway Surgeon*, advocated the use of normal salt solution, intra-abdominally in surgical operations. He makes a routine practice of leaving from 300 c.c. to several liters of the solution, at a temperature of 112° F. in the abdominal cavity, after all op-

erations in which he does not use drainage. In cases in which pus has escaped into the abdominal cavity, he uses the procedure recommended by Dr. John C. Clark, who, in *Progressive Medicine*, June, 1900, says that during four years experience he has made the practice of leaving at least one liter of normal salt solution in the peritoneal cavity after even the simplest operations. "It increases the volume of blood, lessens its specific gravity, stimulates the cardiac ganglia and accelerates the circulation. The skin, kidneys and intestines are stimulated and all the organs of the body functionate better under its influence. The number of red blood corpuscles is distinctly increased. Its special influence in abdominal operations is to prevent shock, lessen the effects of hemorrhage and decrease the virulence of the infection. Next to the Trendelenburg position, he thinks the introduction of normal salt solution is one of the greatest benefits conferred on the modern surgeon in the past five years." Submammary infusions are quite as beneficial, he thinks. They act almost as rapidly as intravenous and are devoid of some of the complications which attend the latter. He has seen marvelous stimulation in moribund cases through the procedure, which safely tided them over the critical period.

Dr. H. A. Hare, in *The Medical and Surgical Reporter*, April 17, 1897, says, "Recent French literature is teeming with descriptions of cases of toxemia treated with marked success by intravenous saline solution." "They have employed them in a great variety of cases, including hemorrhage sepsis and eclampsia. The septic cases require repeated injections, some receiving 25, of a liter each. Dr. Hare reports two cases, one of toxemia following gangrene with a subsidence of the toxic symptoms, but death from gangrene later and one of parenchymatous nephritis with dropsy. who was brought into the hospital in a comatose condition, with muscular twitching. A quart injection was given followed by a copious discharge of urine and a cessation of all symptoms.

My own experience has been limited to but three cases.

*Case I.*—Man, about forty years old who, with his wife and child, ate fish and cheese, among other things, for their Sunday dinner. During the following night the child and later the wife were taken with symptoms of acute gastro-enteritis, severe vomiting and diarrhea. Some time during Monday this patient was taken with symptoms similar to those above described. The woman and child recovered promptly, with little if any medication. The man became rapidly worse. When I first saw him Wednesday at 6 P.M. in consultation with the attending physicians, he had been vomiting almost incessantly for more than 48 hours; had had numerous slimy watery passages from the bowels; temperature was elevated; pulse, rapid, weak and irregular. The usual remedies, bismuth, cocaine, cerium oxalate, etc., usually given for vomiting and diarrhea had been administered without relief. Dur-

ing Wednesday afternoon he had had several sinking spells, seemed to have difficulty in breathing, was faint, did not lose consciousness, but, as he described it, "things got black." He had one of these spells about 6.30 P.M. Reasoning that the cause of vomiting, etc., was an irritation of the vital centers, by the ptomaines circulating in the blood, salt solution subcutaneously was decided upon and about 8 to 10 ounces were injected under the skin in the right axillary region.

He began to feel better almost immediately. The vomiting stopped and did not recur. The sinking spells disappeared and he made an uninterrupted recovery.

*Case II.*—Woman, thirty-one years old, having a pronounced tubercular history and who had tubercle bacilli in her sputum, was taken Saturday P.M., December, 1901, with vomiting. She had in times past been treated with creosote and other antituberculous remedies, and, as she termed it, her stomach was weak. Three weeks prior to this attack she menstruated at her regular period, but contracting a cold her menses stopped. She became suddenly hoarse while reading, Wednesday evening, Dec. 11, and in 20 minutes was unable to speak above a whisper. Having had a slight cough previous to this, she was put on a simple expectorant mixture containing am. carbonate, syrup ipecac, syr. prun. virg., etc., with tr. benzoin co., to be used as a spray for her laryngitis. At about 3 P.M. Saturday she began to vomit. I saw her Sunday evening and was told that during the previous twenty-four hours she had taken bismuth subnit. ingluvin, chlorette, cerium oxalate, all to no purpose. I gave her half a dram of chloranodyne, which seemed to relieve her for a few minutes. Without going into details, will say that during the following week I gave her, at different times, everything ever mentioned or thought of to relieve conditions of this kind and without producing any effect on the vomiting at all, unless it was that it got worse. It certainly got no better. She became weaker and more emaciated every day. As a last resort I gave her normal salt solution subcutaneously, Saturday evening, Dec. 21, in the left axillary region, with most gratifying results. The intervals between the vomiting became longer and by Tuesday, Dec. 24, she was able to retain nourishment. Her subsequent recovery was interrupted by several relapses, caused by overanxiousness; but she finally recovered fully from the vomiting and became able to eat as much and of as large a variety as any other member of the family. She was subsequently placed on vigorous tonic treatment and has had about 2 3/4 ounces of nuclein sol. (P. D. & Co.) subcutaneously. When last seen she weighed 132 pounds, her normal weight; was quite strong, being able to walk several blocks without tiring. It is my belief that had she persisted in the nuclein solution her complete recovery would have been only a question of time, as her tuberculous trouble was not very far advanced.

*Case III.*—Boy, aged 4 1/2 years. On Sunday, Dec. 21, he was attacked by right-sided pneumonia, the right lung being almost wholly involved. The boy had had a slight attack about two years previous, the same lung being involved, leaving him in a weakened state from which he had never fully recovered. The case took a bad turn from the start, with temperature above 103° F. and pulse from 140 to 150 almost constantly. I first saw the case Sunday, Dec. 29, at 3 A.M. Temperature was 104° F., pulse 150, respiration 55 to 60. Bathing reduced the temperature about one degree. The parents were instructed to watch the temperature and if it got above 103° F. to use the bath. When we saw the case again in the afternoon, we were informed that he had been bathed almost constantly all day. Temperature at this time was 104.5° F.; pulse 150, respiration 50. Normal salt solution was given at 4.45 P.M. subcutaneously in the left axilla. About six ounces were given in five or ten minutes. At 5.15 the temperature was 103° F., and at 5.45, one hour after the injection, it was 102.2° F. Subsequent to the injection he had received three grains of phenacetine and 1/100 of digitaline, per orem, which probably had some effect on the temperature for the next few hours. At 9.20 A.M. the temperature was 102.9°; 10.30, 100.4°; 11.15, 102.2°; 12, 103.2° F. Phenacetine and digitaline were given at 12.35. 1.25 Monday morning the temperature was 101.9° F. It got up to 103° F. once on Monday, most of the time at about 102° F. Tuesday it was between 101.2° F. and 101.8° F. Wednesday it rose to 102.8° F. Thursday about the same. Friday and Saturday it ranged from 100° F. to 101° F. During these few days a complication, severe meteorism arose, that had an influence on the final outcome of the case. The bowels seemed to be in a state of paresis, refusing to respond to any medication. Sunday the temperature dropped to normal, ranging Monday, from normal to 100.2°. Tuesday at 2 A.M. the temperature was 102° F.; 7.15, 101° F.; 10.10, 101.2° F. At 10.15 suddenly died, apparently from heart failure.

It seems to me that there was a marked similarity existing in these cases. All were due to the presence of a toxin in the blood. The first case comes under the head of toxins or toxalbumins described by Ziegler, when he says, "Intestinal intoxication, caused by bacterial toxine and toxalbumins occurs when animal tissues or fluids, decomposed by the action of bacteria, are taken as food; and to these intoxications belong the greater part of diseases known as meat, sausage, fish and cheese poisoning." "The participation of the whole system in a local bacterial infection may be very slight or may even be entirely absent, so that the disease appears as a purely local one (tuberculosis). In other cases the locally produced toxins and toxalbumins find their way into the circulating fluids of the body and a general intoxication is produced, i.e., a poisonous effect is asserted upon the nervous sys-

tem and, at the same time, upon the blood and upon the heart."

The fish taken into the stomach Sunday evening failed to produce enough irritation in the gastro-intestinal tract of this man to cause its expulsion, as occurred in the wife and child. The toxins and toxalbumins were produced and, before the vomiting and diarrheas began, were circulating in the blood. We might easily say that the vomiting and diarrhea were, from the first, caused by an irritation of the centers by the toxins, as they were certainly kept up by them. The salt solution, by diluting the toxins in the blood, rendered it less irritating to the brain centers. By its diuretic and diaphoretic action it removed them from the blood, thus entirely removing the cause and leaving Nature to rebuild what had been torn down.

*Case II* is somewhat more ambiguous. Just where the toxic material was produced, whether from some tuberculous foci or from a septic condition of the stomach and bowels, it is hard to determine. The salt solution, at any rate, gave her a new lease of life. Her pulse was weak, thready and irregular, spasmotic twitching of different groups of muscles was present; her face was gray; she was unable to lift her hand from the bed; could not speak above a whisper. Subsequent to the injection her pulse became fuller and more regular, her face looked less cadaveric, and her strength was increasing greatly. It gave her a prop on which to lean, till by rectal feeding she was able to bridge over the chasm caused by the acute gastritis. The subsequent treatment has consisted of nuclein hypodermically and no medication, until she could take nourishment by the mouth. After having passed two full days without vomiting she was given gruel, to which was added, later, toast-water, grapenuts, chocolate, tea, soft toast, etc.

The apparatus used was an ordinary rubber fountain syringe to which was attached a large aspirating needle. The solution was made by adding a bottle of Parke, Davis & Co.'s concentrated saline solution to a pint of boiled well water, filtered through absorbent cotton. The apparatus can be easily carried in a grip and boiled water can always be had at short notice. No bad effects were noticed in any of the three cases above cited. In one it was a complete cure, in another a great help and in the third, I fully believe, would have resulted equally as well had not other complications set in later, complications in no way traceable to the salt solution, because of the length of time elapsing between its use and the death of the patient, and the nature of the complications.

## MEDICAL PROGRESS.

### SURGERY.

**A New Operation for Varicocele.**—The use of the electrothermic angiobrile in lieu of the employment of ligatures, in the open operation for varicocele, is suggested by O. Horwitz (Phil. Med. Jour., March 28,

1903). He employed the instrument devised by Downes and claims for it the following advantages over the simple angiobrile suggested by Freeman: A more scientific, less crude and less dangerous method than that depending on violent traumatism in order to produce hemostasis is substituted, there is less danger of secondary hemorrhage, and from thrombus, the operation is not followed by pain, the instrument is not conducive to the production of orchitis, a condition commonly attending operations in the vicinity of the cord.

**Sterilization of Rubber Gloves.**—In order to make a comparative test of the efficiency of the mechanical cleansing of rubber gloves, O. WANDEL and O. HÖHNE (Münch. med. Woch., March 3, 1903) submitted gloves cleansed in this manner to bacteriological tests. They had been infected with the ordinary pyogenic bacteria. It was found that a complete sterilization in a purely mechanical way by washing with soap and water for at least  $2\frac{1}{2}$  minutes, could be secured without the use of the brush. After washing they should be dried, and dusted with sterile talcum powder. The latter also permits their being drawn on without wetting. The surface of the glove should be perfectly smooth, a roughened glove is more difficult to cleanse. A knowledge of these facts affords a ready means of increasing the safety of ordinary operations. The life of the glove is also prolonged by this procedure.

**Gastro-enterostomy.**—The following is a description of this operation as usually performed by A. W. MAYO-ROBSON (Lancet, Feb., 28, 1903). The abdomen is opened by a four-inch incision one inch to the right of the median line, above the umbilicus. The stomach is thus exposed. The jejunum is readily found by turning the omentum and transverse colon upward and feeling for its commencement to the left side of the second lumbar vertebra. A point about 13 inches from the commencement is chosen for the anastomosis in the anterior operation, and 6 to 9 inches in the posterior operation. The loop is drawn out, emptied by gently "milking" and clamped with special forceps having long, rubber-covered blades, taking care to have the proximal end of the loop toward the cardiac end of the stomach. The union of the viscera may be made outside the abdomen, a long piece of gauze being packed about the operation area. In the anterior operation the point selected on the stomach for the union is near the pylorus, and as close as possible to the greater curvature. After the suture of the two arches is completed, a few additional stitches are introduced in the proximal end of the loop, securing it at a higher level to the stomach wall and also in the distal end, securing it at a lower level, in order to avoid kinking. In the posterior operation the great omentum and transverse colon are pulled upward exposing the under surface of the transverse mesocolon. A small slit is made in this, and enlarged with the fingers, taking care not to wound any vessel. This, in case of adhesions on the posterior wall of the stomach is sometimes simplified by passing the finger into the lesser peritoneal cavity through a thin place in the great omentum, just below the stomach. The finger thus introduced is used to press forward the transverse mesocolon, where it is free from adhesions. The posterior wall of the stomach is thus exposed, and the portion which is to be sutured is drawn through a slit in the transverse mesocolon and clamped by the long, slightly curved blades of a special pair of forceps, covered with rubber in order to avoid crushing the wall. The lateral margins of the incision in the transverse mesocolon may be stitched on each side of the stomach by a single suture in order to prevent closure, and a slit and consequent narrowing of the

jejunum, as has been reported by Czerny. Union of the viscera may be effected in both anterior and posterior operations in one of three ways. Simple suture; by the decalcified bone button of the author; and by the Murphy button. The suture employed in the first two methods is practically the same. The bobbin is a splint upon which the stitches are applied. By its use an immediately patent opening of known size is secured. The bobbin is digested in 48 hours after it has accomplished its purpose. The Murphy button is generally used only when the greatest haste is desired, as the stitching in either of the first two methods may be done in from four to eight minutes by practised hands. The button is rarely, if ever, necessary. Mikulicz regularly employs it and speaks well of it, and many other surgeons prefer its use to all other methods. The method of stitching is the following: The stomach and intestine having been placed in apposition, a continuous Lembert stitch of plain celluloid thread unites the serous surfaces for a line of two inches or more. The line of this stitch is semi-oval, and joins the surface of the viscera close to the posterior portion of the anastomotic opening. Incisions are then made into both viscera in front of this suture line. A second continuous suture is now passed, uniting the posterior cut edges. This may take only the mucous membrane or all the cuts, and is of catgut. After completing the posterior half, the bobbin is introduced and the anterior semicircles of stitches are now continued. First the catgut circle is made into the cut edges, and then the celluloid circle through the cuts in precisely the same manner as the posterior line of sutures. If the bobbin is being used, the sutures are drawn firmly upon it and tied. If not, the stitches must be interrupted at one point or more in order to prevent the sutures drawing and puckering the orifices.

**Removal of an Enlarged Spleen.**—A case which presents several interesting features is reported by J. C. WEBSTER and T. TIEKEN, (Jour. Am. Med. Ass'n, April 4, 1903). The patient, a woman of thirty-eight years, presented a tumor in the right iliac region, of long duration. At a previous operation it had been pronounced an inoperable tumor of the right kidney on account of its slow increase in size since then, malignancy was not suspected. The accompanying pigmentation of the skin suggested an involvement of the suprarenal glands. The clinical symptoms suggested however, hydronephrosis of the intermittent type, associated with a calculus or with stricture or torsion of the ureter. There were several crises of pain requiring the administration of chloroform, the swelling varied in size and became smaller when urine was passed after the attacks of pain. The presence of leucocytes in the urine and the irregular elevation of temperature suggested an infected process in the supposed renal swelling. Surprise was therefore expressed when the tumor at operation was found to be a very large spleen tightly adherent in the pelvis and also to the abdominal and pelvic viscera. It was attached by a twisted pedicle which contained the enormously dilated veins. The patient made a good recovery. The spleen weighed 28 ounces, was markedly congested, presented a moderate increase in the connective tissue trabeculae, and contained numerous mast cells. The variations in the size of the tumor were probably associated with increase and diminution of the quantity of blood in the spleen, associated with disturbances in the circulation due to torsion of the pedicle. The latter without doubt also caused the attacks of pain.

**Gastro-intestinal Perforations and Their Diagnosis.**—Following a very complete discussion of this subject, F. G. CONNELL (Jour. Am. Med. Ass'n, April

4, 1903) presents these conclusions: The previous attempts at an early and accurate diagnosis of perforation without opening the abdominal wall have not been adopted. There has been practically no improvement in diagnosing such conditions during the past century. The treatment has, however, been almost perfected when compared with the older method. The diagnosis of the perforations is one of the most important unsolved questions of abdominal surgery. There is no pathognomonic sign or group of symptoms of perforation. The only positive method of arriving at a diagnosis is to either perform an exploratory laparotomy or to await the development of a peritonitis. The latter reveals the diagnosis too late for effective treatment. Exploratory laparotomy as a routine measure is too dangerous, but the consensus of opinion is in favor of laparotomy as a choice between two evils. The injection of air or normal salt solution into the peritoneal cavity and withdrawal of the same for examination will do no harm. Such a procedure will, in many instances, reveal a perforation before any signs of peritonitis exist. The treatment of the perforation *per se* is simple and satisfactory. The treatment of the complicating peritonitis is multiple and unsatisfactory. The best treatment is prophylactic, *i.e.*, early diagnosis and repair of perforation before peritonitis has become established.

**Anesthetics.**—The dangers from chloroform and ether as general anesthetics, although comparatively slight, yet must be taken into consideration in every operation and patients are frequently found in which it is highly inadvisable to administer either. W. A. BRYAN (N. Y. Med. Jour., Feb. 21, 1903) has used ethyl chloride in a large number of cases for general anesthesia and has compiled statistics from several operators who have employed it in thousands of cases. He believes that it is much safer than either ether or chloroform, but not so safe as nitrous oxide. It produces anesthesia in from fifty seconds to two minutes and maintains it as long as necessary, being restricted, it seems, only by the cost of the drug. It allows the patient to regain consciousness in from two to four minutes and he may then, in a few minutes more, get up and go on his way unaided. The after-effects are very slight, if present at all. The drug is so evanescent that it cannot be kept long in the system unless constantly inhaled. The method of administration is through a closed cone that allows a spray of the liquid to run upon a piece of gauze over which all the inhaled air must pass, and containing an outlet valve so as not to permit waste by expiring through the same opening. The nitrous oxide cone of the dentists is very good. It may be said, however, that not every case is completely relaxed by it and ocular reflexes are not always destroyed.

**Frequent Association of Hernia with Hydrocele.**—In a previous paper V. REMEDI (Gazz. Osped., March 8, 1903) reported fourteen cases of hydrocele in which, during operation for that affection, a small hernial sac, the remains of a non-obliterated peritoneovaginal canal, was discovered at a point corresponding to the internal abdominal ring; though there was nothing in the history or symptoms to suggest hernia. To this number he adds eleven more cases operated upon for hydrocele, in eight of which the same condition was found. The three exceptions noted, have caused him to modify his former statement that hydrocele is always associated with non-obliteration of the peritoneovaginal process, and consequent hernia; though he still emphasizes the frequent association of the two conditions. In his opinion, this subject is of sufficient importance to merit the careful study of all surgeons, as, in the event of frequent coincidence of hydrocele

with previous peritoneovaginal process being proven by repeated observations, it might be advisable, in operating for hydrocele, to extend the incision to the inguinal canal in order that the existence of such a pervious process might be discovered and obliterated, thus insuring the patient against a possible interstitial external oblique hernia.

#### MEDICINE.

**Achyilia Gastrica and Pernicious Anemia.**—Austin Flint was the first to think of the possible connection between grave anemias and atrophy of the stomach wall. The theory was based upon the knowledge of the importance of the gastric secretion in preparing food for assimilation and nutrition rather than upon any clinical and pathological observations. M. EINHORN (Med. Rec., Feb. 28, 1903) shows from his experience that the coexistence of the two conditions is an unusual observation. He cites three cases in which achyilia gastrica existed for months or even years and was followed by a return to the normal state of secretion. Furthermore he had careful blood examinations made upon fifteen cases of achyilia and found that in only four was there a notable diminution in the hemoglobin and red blood cells. In the four cases the hemoglobin ranged from 40 to 60 per cent. and there was some poikilocytosis but there were no normoblasts or megaloblasts. The clinical symptoms also did not follow the course of a pernicious anemia. The following conclusions are drawn: (1) In most cases of achyilia a nearly normal blood count is found; (2) we occasionally observe the presence of gastric juice in cases of pernicious anemia, sometimes even in increased amount. If the pernicious anemia were caused by the atrophy of the mucous membrane, the achyilia would be marked as soon as the symptoms of anemia appeared. If the conditions coexist, it probably means that they are both due to the same cause or that pernicious anemia finds a ready soil in achyilia.

**Hypodermoclysis.**—This valuable therapeutic measure was first brought into prominence by Cantani in 1892, during the cholera epidemic. R. C. KEMP (N. Y. Med. Jour., Feb. 28, 1903) gives the results of several experiments which have been made upon the dog to demonstrate the rapidity and nature of the action of hypodermoclysis. By the use of potassium ferrocyanide combined with the saline solution it was found that in  $3\frac{1}{2}$  minutes the secretion of the Prussian blue was noted and became very marked in four minutes. From this time the increased flow of urine was a very prominent feature but there was no perceptible increase in the blood pressure. Profuse diuresis occurred even after the renal nerves were severed, thus showing that the action of the normal saline solution was upon the renal cells. In numerous experiments upon artificially congested kidneys it was found that the congestion was much diminished by the injection of saline solutions. In regard to the technic of the operation it is suggested that the fluid be allowed to flow slowly, so that the tissues may not be overdistended and the absorption may readily occur. The needle should be inserted slowly and obliquely, avoiding nerves and blood vessels. It is not advisable to inject into muscles as painful lumps or even abscesses may result. The best region to use for this injection is perhaps the iliolumbar, the space between the crest of the ilium and the twelfth rib. It is practically the point of least motion in the body and does not interfere with the dorsal position or cause pain through movements of the limbs or from abdominal or thoracic respiration. The ideal solution to use is a 0.6 per cent. salt solution in boiled and filtered water. One dram of the solution to one pound of body-weight is the maximum quantity that

will be taken care of by the kidneys every fifteen minutes and hence in a patient weighing one hundred pounds  $12\frac{1}{2}$  ounces will be taken care of in the given time. The rapidity of absorption depends considerably, however, upon the condition of the circulation and with a rapid and feeble heart with poor action of the capillaries, it is a much slower method than enteroclysis. The danger of overdistension here becomes an important one. If, however, in such a case we combine with the hypodermoclysis, enteroclysis with normal solution at  $120^{\circ}$  F., the heart is immediately started up and absorption occurs more rapidly. For practical purposes the fluid may be injected once, twice or three times during twenty-four hours, depending upon the reaction and the rapidity of absorption. In an adult six ounces to a pint is indicated in uremia and allied conditions; from a pint to a quart, if there is shock or hemorrhage. In pulmonary hemorrhage or in hemorrhage from intestinal ulcers, as in typhoid hypodermoclysis, is an excellent method. An infusion or enteroclysis might stimulate the heart too vigorously and cause a recurrence of the hemorrhage. Preferably a fountain syringe should be used, but a Davidson's syringe or funnel may be employed. Usually an elevation of two to three feet is sufficient, unless a very small needle is used. An aspirating needle of moderate size is best, but an ordinary hypodermic needle can be used in emergency. Gentle peripheral massage assists absorption. As there is considerable loss of heat in passing through the tube the fluid should be at a temperature from  $115^{\circ}$  to  $120^{\circ}$  F. Indications for its use may be deduced from the effects produced by the procedure: (1) It increases the quantity of fluid in the vessels by replacing that which has been lost by hemorrhage or diarrhea. It adds fluid to the circulation and, therefore, stimulates a rapid and feeble heart as in shock; (2) it dilutes the poison and aids in the elimination of toxic products through its diuretic action, as in sepsis or in uremia; (3) it causes profuse diuresis and relieves acute renal congestion, as in uremia and oliguria; (4) it is asserted by many to have a hemostatic effect, and, hence, is of benefit in various kinds of hemorrhage for several reasons. From this it would appear that in a large number of toxemic cases due to bacterial or other causes hypodermoclysis may serve a valuable end and it undoubtedly merits a much wider field of usefulness than is accorded it at the present time.

**Filariasis.**—Owing to the rarity of this affection, post-mortem studies of the organic condition accompanying it have been few. A distinct addition to the literature of the subject is made by L. PLASENCIA (Rev. de Méd. Trop., Feb., 1903). In the course of an examination of the organs of a patient who had died of typhoid fever, the author found numerous embryos of filaria in the lungs; and upon microscopical examination, the arteries showed proliferation of the endothelium; this being most pronounced in those parts in which the filaria were massed. In the subendothelial coat numerous white cells were seen; the external coat also being infiltrated with these cells. The lumen of the arteries was dilated, while that of the veins was narrowed, owing to the greater proliferation of endothelium and hyperplasia of the middle and external coats; these also being infiltrated with leucocytes. The capillaries, which were in general dilated, were the site of marked proliferation; and numerous filaria were seen in them. The pulmonary alveoli were dilated for the most part and filled with a granular substance, a few red and white cells, as well as epithelial cells, many of which were pigmented. The connective tissue forming the walls of the alveoli was in part thickened, and again destroyed. In the tissue surrounding the arteri-

oles there were many pigmented alveolar cells. Surrounding the bronchioles and infiltrating the peri-bronchial tissues, which in some instances were thickened, in others, degenerated, were many migrated white cells. Proliferation of their epithelium was also observed, and evidences of congestion were seen throughout the lung. The morphological characteristics of the filaria seen in the lung were those of the *Filaria Bancrofti*. The author believes that two distinct pathological processes had gone on in the lung; the one chronic, due to the filaria, the other acute, due to the typhoid fever. In his opinion, the endo- and periarteritis were directly attributable to irritation of the endothelium by the embryos of filaria or to thrombi of which they formed a part. This brought in its train diminution or torpidity of the blood current and consequent disturbance of nutrition in the pulmonary tissue, followed by emphysema and dilation of the bronchi.

**Treatment of Fibrinous Pneumonia with Hetol.**—The good results observed from the use of cinnamic acid in pulmonary tuberculosis suggests the thought that it might also influence the primary focus of the pneumonic process. With this end in view, KRONE (Münch. med. Woch., March 3, 1903) employed injections of hetol in the early stages with excellent effect. The dose varied from one thirtieth to one sixteenth of a grain, and was given in fourteen cases. Three of these were unsuitable, being alcoholics, with cardiac degeneration. The other ten cases all showed a prompt reaction after the injection and in no case did a general infection result. The author thinks that this remedy is worthy of further trial and believes that if given early and proper dosage has undoubtedly a favorable influence on the pneumonic process. The fever is reduced, respiration becomes easier, the patient seems more comfortable, and general infection is apparently avoided.

**The Use of Compressed Air to Enhance the Action of Remedies.**—Condensed air has been extensively used to facilitate the introduction of gases into the lungs. In 1891 a paper was published which endeavored to demonstrate the possibility of enhancing and perpetuating the effects upon the cerebrospinal axis of certain stimulants and sedatives, when exhibited while the patient remained in air condensed more or less beyond that of the normal atmosphere. It was observed that men working in caissons showed at such times an increased effect from alcohol previously imbibed. The administration of ether, ammonia, and other stimulants was followed by a similar augmentation of their physiological effects. The explanation of this phenomenon probably depends on retardation of the circulation, which permits the remedy to linger beyond the ordinary in the field of action. The author of this method, J. L. CORNING (Am. Med., April 4, 1903), now brings forward some further observations. He has found that the power of compressed air to increase the effect of remedies upon the cerebrospinal axis may be heightened by the simultaneous exhibition of substances which dilate the capillaries. He describes an apparatus which has been used in 6,000 cases without any ill effects. The conclusions are summarized as follows: (1) Limitations of the method. The plan of treatment is of no use whatever in the management of the inflammatory and degenerative conditions of the cerebrospinal axis. The counterindications are, disseminated sclerosis, spastic spinal paralysis, poliomyelitis, accidents and diseases of the blood vessels, neuritis, rheumatism. (2) Legitimate sphere of action includes cerebrospinal affections of a functional character in which pain, exhaustion, insomnia, or depression are prominent features. Here the effects are striking and quite beyond those obtained in any other way. Finally,

compressed air, by increasing the pressure in the renal blood vessels, gives rise to diureses. This effect, obtainable from the air alone, becomes exceedingly pronounced when a diuretic is given, even in insignificant doses.

**Treatment of Typhoid with Acetozone.**—It has been stated that this substance, while in itself biologically inert, under certain conditions underwent changes which produced a germicidal activity far greater than that of any substance known heretofore. In view of the fact that it might prove an efficient intestinal antiseptic, F. G. HARRIS (Therap. Gaz. March 15, 1903) employed it in 128 cases of typhoid fever during a recent epidemic. The most satisfactory results were obtained from solutions made by adding 12 to 15 grains of the powdered acetozone (as marketed) to the quart of hot water (120° to 130° F.). The bottle is shaken vigorously for several minutes. If allowed to stand for 15 to 30 minutes the insoluble substances settle to the bottom. The supernatant fluid is then decanted. The solution replaces water and all other liquids (except milk, which constitute almost the entire food during the persistence of fever,) and the patients are not only allowed to drink it ad libitum, but urged to do so. The solution is also given as medicine in from 4 to 6 ounce doses every four hours. Occasional small doses of sodium phosphate or magnesium sulphate are given to move the bowels and to carry the acetozone solutions as far down the intestinal canal as possible. The results from this method of treatment were very encouraging. Only eleven cases died. The average duration of the disease was shortened by at least two weeks, the temperature became more readily reduced, the stupor and delirium were very much less, tympanitis less frequent, and diarrhea was checked. The author concludes that where the treatment is begun during the first week of the illness and large amounts of the solution are given regularly and often, assisted by gentle laxatives, the temperature will return to the normal in from ten to twelve days.

**Injection of Antistreptococcal Serum as a Means of Treating Variola.**—The important rôle which streptococcus plays in variola, especially in the suppurative and the eruptive stages, has induced E. SCHOUILL, a physician in the French Hospital in Tunis, to employ injections of antistreptococcal serum as a means of treating this infective disease, after the manner suggested by W. D. Lindsey a few years ago (La Sem. Med., March 11, 1903). Schouill regularly injects 60 c.c. of the serum in three divided doses, and repeats these injections, according to the gravity of the case, after twenty-four hours, or even within the same day. In two of his patients he was obliged to give a fourth injection of 20 c.c. The punctures are made in the flank, with every antiseptic and aseptic precaution, and do not provoke either pain or any reaction. This treatment brings about a rapid improvement in all the symptoms due to the eruption, namely, the painful condition of the face and extremities, photophobia, dysphagia, hoarseness of voice, coughing and the like, together with pruritus. These symptoms continue during the grave cases, naturally, but in the majority of cases a single injection is followed by a rather sudden improvement, together with a fall in the temperature. The suppurative process does not continue, but tends to end suddenly. His records comprise 22 cases, namely, 5 hemorrhagic, 8 confluent and 9 discreet types of the disease. Only two of his patients died, making a mortality of 9 per cent. Among 34 other patients not treated with the serum, 7 died, giving a mortality of 20.5 per cent. This serotherapy presents the advantage of greater facility, when compared with phototherapy.

with red light. There is no reason why both might not be combined, as Schoull did in one extremely grave hemorrhagic case. It is important to notice that the serum does not always bring about cessation of the suppuration, as was noted by Schoull in three of his twenty-two individuals. This fact seems to be due to variation in the value of the serum itself, one horse having given on several different occasions serum of highly different values. This variability of the serum constitutes one of the drawbacks of the method.

**Treatment of Exophthalmic Goiter with Opium, Cocaine and Tobacco.**—Recognizing the fact that the exophthalmic goiter is practically a state of overactivity of the thyroid gland, Drs. De Mers and Godrs have reasoned that the principal indication to be fulfilled in this disease consists in restoring the exaggerated function of the thyroid gland (La Sem. Méd., March 11, 1903). Thus they have enunciated the idea of combating the disease with opium, tobacco and their derivatives, which exercise a paralyzing action on nutrition and the thyroid function, according to Hertoghe. Their first attempt was carried out upon a thirty-three-year-old woman who presented all the characteristic symptoms of exophthalmic goiter. They began by giving morphine, but, since this medicine was not well borne, they suggested cocaine in progressively increasing doses, beginning with 0.005 gram and ending with 0.02 gram in 24 hours. The woman also smoked two or three cigars a day. Under the influence of this treatment the patient was almost immediately relieved, and after three months was free of tachycardia and tremors. The other morbid signs disappeared equally well (but the neck continued enlarged and the exophthalmia persisted probably because vasodilatation had become permanent). The treatment was persisted in for some time, only in gradually decreasing doses, and finally suspended. A relapse occurred a year and a half later, but was cured by the same methods, with equal promptness. Since this one case was observed, he treated two others in exactly the same manner. Both were women and were cured rapidly and are still reported well.

**Leucocytosis as a Symptom of Internal Purulent Accumulations.**—In studying the effect produced on the white blood corpuscles by pus in the system, BLOSSBERG (Wien. klin. Woch., No. 47) arrives at the following conclusions: Leucocytosis is a phenomenon accompanying each and every suppuration in the body. In peripheral suppurations, as abscess, phlegmon the leucocytosis is rather slight; but in suppurations in the abdominal cavity, such as appendicitis, perimetritis, paranephritis, etc., the leucocytosis is quite considerable. The diminution of the pus can always be noted from the diminution of the leucocytosis. The number of the white corpuscles always tends to increase in proportion to the diffusion of the suppurative process, but diminishes as soon as the process begins to regress. The decrease of the leucocytosis is not commensurate with the rise of temperature but with the diffusion of the suppurative process outside of the primary focus. And some observers noted the fact that in the so-called pseudocrisis of pneumonia there is no abatement of the leucocytosis, although the temperature tends to decline. On the other hand, leucocytosis may indicate retention or increase in the secretion of a wound, the formation of a fresh purulent focus, or of a metastasis, as well as a complication in the suppurative process, as, for instance, an additional pneumonia or erysipelas. Leucocytosis may also aid in differential diagnosis between suppuration, as in the cecum, and mechanical occlusions in the lower part of the intestinal canal or between typhilitis and the lesions of typhoid fever in the latter of which there is

an increase in the leucocytosis. As regards the absence of leucocytosis, Blossberg thinks that it may possibly be due to either of two causes: (1) The organism may be so strongly fortified against any invasion as to battle against infection without any intervention on the part of leucocytosis; or (2) on the contrary, it may be early in the disease so overwhelmed with the intensity of the disease as to fail to react to leucocytosis.

**As to Prognosis in Nephritis.**—It is not known as to what amount of albumin may be considered as a basis for a favorable prognosis in nephritis, for albumin is by far not a reliable symptom (TREMESSCU, Thésé, Paris, 1902). A small amount of albumin may be present in grave renal lesions, and on the contrary, a large quantity of albumin may not necessarily mean a fatal prognosis (albuminuria in consequence of excessive fatigue). The same may be said about the edema. It may be met with in parenchymatous nephritis, while being absent in the interstitial form in which it appears only in consequence of cardiac insufficiency. The cardiac and vascular symptoms are of very great importance in forming an opinion about the prognosis. Even when we notice the rise in arterial tension and signs of cardiac hypertrophy we need not conclude at once that the loss is irreparable, for this condition may last even for years, a rather rare occurrence. But the gravity of the situation becomes sooner or later apparent, and signs of cardiac debility betoken clearly the approaching danger. Alterations in the retina are of bad prognostic omen; out of 100 cases of albuminuric retinitis Bull followed up 86, of which 57 died during the first year, 12 during the second, and 17 during a longer period. Phenomena of uremic intoxication are not always grave. In acute nephritis the patient may recover after delirium and even convulsions. Cephalgia that resists treatment is a bad indication; if accompanied by vertigo, stupidity, insomnia, it indicates an approaching explosion of grave symptoms. Dyspnea and asthmatic attacks may last for years, while the Cheyne-Stokes respiration appears usually during the last weeks of life, and occasionally during the last months.

#### HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

**Micrococcus of Acute Rheumatism.**—The bacterial origin of acute rheumatism has been pretty generally accepted for some time because the clinical and hygienic aspects of the disease present all the characteristics of an infective illness. It is to some extent endemic and at times exhibits a tendency to epidemic prevalence. It presents the stigmata of an attenuated septicemia. That it is due to an irritant circulating in the blood is evidenced by the concurrence of pyrexia, rapid anemia, erythema and purpura, polyarthritis, pericarditis, endocarditis and at times pleurisy, pneumonia and nephritis. It is also probable that this irritant is of microbial origin on account of the frequency with which the onset of symptoms can be associated with an antecedent pharyngeal inflammation. E. W. A. WALKER (Practitioner, Feb., 1903) has conducted a large number of experiments, taking cultures from numerous typical cases of acute rheumatism and in nearly all of them it has been possible to demonstrate the presence of a micrococcus which is the same germ which has been described by Poynton and Paine, and which is called by them a diplococcus. It is a tiny micrococcus which is usually found in ordinary films from artificial cultures, arranged in pairs and chains and it may be made to exhibit chains of remarkable length. It stains with ordinary dyes and has been

grown upon various media, being both anaerobic and aerobic. It is, at present indistinguishable from an ordinary streptococcus. There does exist, however, a certain test which promises a definite result. Marmorek claims to have proven the identity of all the streptococci found in man—with the possible exception of that of scarlet fever—by the observation that they all refuse to grow in filtered culture-fluid in which a streptococcus has been previously grown and filtered out, though other organisms can flourish in such media. Two experiments with the *Micrococcus rheumaticus* showed that there was abundant growth in such inoculated fluids, and if this should prove to be a constant characteristic its separation from the ordinary streptococcus would be complete. This question of specificity is one which demands further investigation and its settlement may throw some light upon the problem of toxic specificity, the nature of the acid formed in such profusion by the micrococcus. The pathways of infection also need renewed investigation. The importance of the tonsil is recognized, but the incidence of the primary valvulitis on the left side of the heart and the mitral valve especially has aroused the suspicion that the pulmonary system may be at least one avenue of entrance.

**Improved Method of Discovering Tubercle Bacilli in the Urine.**—The following simple apparatus for the detection of the tubercle bacillus in the urine is described by O. H. FORSELL (Deut. Zeitschr. f. Chir., 1903, B. 66, H. 3 and 4). A glass cylinder holding 1,100 c.c., 40 cm. long, 6 cm. in diameter, is drawn to a sharp cone at the lower end, which ends in a tube that is 6 cm. long and 1 cm. in diameter, which is closed by an ordinary glass stopcock. The receptacle is suspended by a simple wire loop wound about the upper extremity, which is provided with a flange for the purpose. The vessel is filled with urine and then the contents are allowed to settle for 24 hours. The stopcock is then opened, and a number of the tubes of an ordinary centrifuge are drawn off. The author uses centrifuge tubes 9.5 cm. long and 1.3 cm. in diameter, brought at the closed end into a rather acute conical point. These are then covered with a rubber cap and put into an ordinary steam turbine centrifuge. The rate of rotation is brought to 10,000 per minute, but an average of between 7,000 and 8,000 is as a rule sufficient, if maintained for fifteen or twenty minutes. As a rule the tubercle bacilli will be found in the point of the first of the two tubes, in numbers amply sufficient to establish a diagnosis. Without exception, the author cleans the apparatus after each investigation as follows: After a painstaking mechanical cleansing and washing out, he fills both the apparatus and the tubes of the centrifuge with a six-per-cent. solution of soda lye, which is allowed to remain for twenty-four hours. After this he again cleans the apparatus mechanically, and considers it fit for subsequent use. He has conducted a number of experiments, and established the fact that solutions of soda lye, beginning with 5 per cent. and higher, will convert the tubercle bacillus in twenty-four hours into an amorphous mass.

**Pathology of Nerve Cells in Typhoid and Diphtheria.**—The effect of the toxins of typhoid and diphtheria have been studied by P. SABOLTONOFF (C'blatt d. med. Wissensch., Feb. 28, 1903), in rabbits and guinea-pigs. From the changes which were observed in the nerve cells, it is possible to assume that the nervous system of rabbits is less sensitive to diphtheria toxins than that of guinea-pigs. The experimental trials in both species shows a marked analogy in the harmful effects produced by the toxins of both typhoid and diphtheria bacilli. In both cases a series of structural

changes take place in the nerve cells, which in the acute process were of about the same character. In the chronic cases the most marked changes consisted of atrophy of the cells in the anterior horns of the spinal cord.

#### EYE, EAR, NOSE AND THROAT.

**Tuberculous Laryngitis.**—This disease has always been looked upon with great dread by all physicians and is usually considered as meaning an early fatal termination of the case. J. C. SHARP (N. Y. Med. Jour., Feb. 7, 1903) believes that it never occurs as a primary lesion, being always secondary to pulmonary tuberculosis. Therefore, the vigorous local treatment which was so much in vogue till recently has undoubtedly been the cause of much useless suffering by patients, and it is well that such local treatment has now been pretty generally discarded. He, furthermore, believes that not all cases are hopeless. He divides them into two classes, upon which he bases his prognosis: (1) Cases where the ulceration is confined to the true cords, ventricular bands and interarytenoid commissure, without infiltration of the surrounding tissues; (2) cases with ulceration of the arytenoids, aryepiglottic fold, true cords and ventricular bands with infiltration or infiltration without ulceration. In patients with ulceration without infiltration and with a pulmonary lesion not far advanced, particularly where there is little digestive disturbance and the patient can tolerate large doses of creosote, the chance of recovery is good, even on Manhattan Island and a favorable prognosis can be given. In cases with infiltration a change in climate is necessary and if to the infiltration ulceration is added the patient will die within from three to six months and it is folly to send him away from home to die. These patients never improve on creosote and, as it is very irritating to their painful larynx, it had better be omitted. The chief plan of treatment should be to make the patient comfortable. The class of cases in which the commissure, bands and true cords are infiltrated without ulceration, will do well on large doses of creosote and if the drug is well borne, a large percentage will get well, if they are made to live an out-of-door life and follow the directions which should be given to such patients. The liquid beechwood creosote is the preferable preparation and is recommended in doses gradually increased up to forty or fifty drops three times a day. Cod-liver oil can be given with benefit at the same time. Numerous cases of recovery are reported under this line of treatment.

**Diagnosis of Foreign Bodies upon the Surface of the Eye.**—The effect of fluorescein upon abrasions of the conjunctiva is utilized by J. S. FERNANDEZ (Cron. Méd.—Quir. de la Habana, Feb., 1903), to bring more clearly into view foreign bodies upon the surface of the eye. This substance infiltrates the tissues at any point at which there is a break in the epithelium and imparts to such an area, a bright green color. As the tissues immediately surrounding a foreign body are more or less injured, they take on a vivid green hue when fluorescein is instilled into the eye, thus clearly outlining the foreign body. Fernandez has also found the instillation of fluorescein a valuable aid in the differential diagnosis between old and recent opacities of the cornea; the former not taking on the characteristic green color when treated with this substance, as do the latter; and loss of epithelium from ulcers or any cause is clearly indicated by its use. When the galvano-cautery is to be applied for infectious ulcer or instrumental work of any kind is to be performed, its instillation prior to operation serves to define the limits of the diseased tissue to be operated upon.

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SATURDAY, APRIL 25, 1903.

IRON IN THERAPEUTICS.

NOTHING in the whole history of therapeutics is more interesting or more instructive than the vicissitudes of the theories on which iron has been administered at various times. For almost as long as the memory of man runneth it has been recognized that the exhibition of iron in certain forms was useful in the treatment of anemic conditions. Originally this was considered to be due to the fact that iron by its very nature gave strength and that somehow the substance of the metal was transmuted into vigor for the affected individual. When, long ago, the countryman dissolved shingle nails or some other form of iron in vinegar, or made what the Germans call Rostwasser by allowing iron to collect in water, and gave the draught to his anemic daughters, it was with no idea that the acetate of iron or oxide of iron might in some way affect the chemism of the body, but that the physical qualities of the metal somehow were absorbed and transformed into health-giving, bracing properties for the patient.

When it was discovered that the principal element in the coloring matter of the blood, hemoglobin, was an iron compound and that the transference of oxygen from the outer air to the tissues was accomplished mainly by means of the unstable

compounds that oxygen forms with this iron-containing substance, then it was concluded at once, and apparently on good grounds, that the reason why iron was useful in anemia was that the iron compound administered by the mouth was absorbed directly as food would be from the intestines and helped to make up for the deficiency of iron which exists in anemic blood. For a considerable time this theory held its ground and a definite advance in scientific medicine seemed to have been made, beyond which it would be unnecessary to seek for further reasons. The basis of iron therapy, in a word, appeared to be settled for all time.

The advances in physiological chemistry, however, showed that meat and most of the vegetables which men consume contain an abundance of organic iron, certainly much more than would be necessary to supply the place of the comparatively small amount of iron whose absence from the blood is the index of the anemia and the condition on which apparently the weakness is dependent. Besides, Sir Andrew Clarke had insisted very much that in addition to iron therapy the most important element in the treatment of anemic conditions was to put an end to the absorption of toxic materials from the intestines by preventing constipation. Evidently the condition of the bowels had something to do with the presence of anemia, especially in young people, and accordingly the theory of iron therapy was modified and it was said that the iron ingested was not directly absorbed but served to prevent the formation of certain toxic compounds, especially substances related to hydrogen sulphide, which occurred in the intestines during periods of constipation. There are those who still consider that this is the main reason why iron acts favorably in anemic cases.

In the meantime a number of observers in various countries have been finding some very interesting details of therapeutics as regards various metallic substances more or less closely related to one another. It was shown for instance by German and French observers that manganese exerted something of the same influence as iron when administered in corresponding doses to anemic patients and that this substance made a useful adjunct to iron in such cases. As manganese has normally no place in the tissues at all, this came as a distinct surprise to the holders particularly of the original theory of iron therapy. Other observers showed that almost any of the so-called heavy metals would prove as effectual as iron for the treatment and relief of anemic con-

ditions. Sir William Broadbent, over a year ago, in his article in the Von Leyden Festschrift, stated that copper or cobalt or nickel might be used in small doses to replace iron in the therapy of anemia with excellent results. Employed in dispensary cases with reasonable care as regards diet and exercise any of these metals gave the tonic stimulus that was supposed to be the specific effect of iron a few years ago and some of them even succeeded in cases in which iron had apparently failed. Here in America it had been shown by Taylor, some years before, that mercury in small doses might act well as a tonic and that if carefully administered it would cause an increase rather than a decrease in the number of red blood corpuscles and in the hemoglobin value of their contents. This was a startling addition to our clinical knowledge of the so-called iron therapy. We were really in the presence of a metallo-therapy.

It has taken a long while for pathologists to learn anything definite about the pathology of the red blood corpuscles. The white blood corpuscle has been described as existing in a number of pathological conditions while the more plentiful red cells have been less fruitful fields for discovery. Recently it has been found that there is a characteristic degeneration of the red blood corpuscles that takes place as the result of certain toxemias. This degeneration occurs typically very early in lead and arsenic and other metallic poisoning. Curiously enough, however, a corresponding degeneration has been found to occur in connection with the administration of an excess of iron. This accounts for the unpleasant results that follow the administration of iron in plethoric conditions better than any previous etiological suggestion. It would seem then that iron acts as a stimulus to the vitality of the red blood corpuscles and that this stimulus may easily be too great and set up degenerative processes.

The whole subject of iron therapy is a lesson in the attitude of mind that a physician should assume with regard to therapeutic questions. While there has been no doubt that clinically iron was beneficial in anemic conditions the various theories to account for it have up to date all been without substantiation and our use of it has depended largely on empirical reasons. Empirical advances in therapeutics then, the practitioner must be ready to accept, even though the reason for them is not always evident. On the other hand, pretty theories must not be allowed to play too important a rôle in persuading the practitioner

as to the possible good that may result from the administration of drugs whose benefit may be due to entirely different reasons from those alleged. In a word, the mental attitude must be one of ready receptivity and yet of thoroughgoing conservatism.

#### DEXTRINE IN PLASTER OF PARIS.

ALTHOUGH no less a surgeon than Dupuytren is credited with having first conceived the idea of utilizing this material as a stiffener for his surgical dressings, of recent years no mention and no use appear to have been made of it. This is an excellent example of the perishing of a most useful method, and it will be of interest and value for the members of the profession to know that recent experiments have been made with it which show that the old French writer was by no means incorrect in his statements.

If incorporated in a ten per cent. proportion by volume with the plaster of Paris and carefully rubbed up with it, the crinoline bandages made from this mixture have properties distinctive to themselves. It is very convenient to apply such dressings as a shell over the plain plaster of Paris dressings. These can be made very much lighter than usual, because the dextrine bandages reinforce the plaster of Paris to a very remarkable degree. This dressing is particularly useful in making ambulatory casts, both because they may be made much lighter than in any other way, and because of their greater durability.

Another very important use for this technic is in making the plaster of Paris jackets for spondylitis. It has been claimed that dextrine would render the cast impermeable, but such is not the case. The patients find that any lack of porosity which may be present is more than made up for by the greater lightness, which is possible because of the greater strength. It is as a rule sufficient to make the dextrine shell one-thickness of crinoline. This should however be doubled or trebled on the sole of the foot and just above the ankle, namely upon all parts where strain occurs.

It is desirable to allow the plaster of Paris portion of the cast to dry reasonably well before applying the dextrine bandages, because when the dextrine is heated, which may be done to hasten the setting, it appears to interfere with the rapid drying of the plaster beneath it. For the purpose of heating the cast, an automatic plumber's gasoline stove is very serviceable, the type without the air pump being preferable be-

cause of its greater freedom from danger. This throws a very hot flame and should never be used if the patient be unconscious, but there need be no fear of burning any one who is awake. Casts made with this shell of ten per cent. dextrine and dried in this way can be walked upon in as short a time as the ordinary plaster of Paris cast. It is conservative to say that they will last at least one-third longer; they are about one-third lighter and their porosity is not sufficiently decreased to give the patient discomfort.

#### PERCENTAGE PHYSIOLOGY.

ATTENTION has recently been called by a committee of investigation in Pennsylvania to the method and manner in which physiology is taught in the public schools of that State. It has been found that the text-books used are nearly all written from the viewpoint of the moralist rather than from that of the scientist, and hence that the teaching, while not necessarily pernicious to the general mental training of children, is bigoted and at times absolutely false. The desire to impress upon the youth of this age an abiding and useful lesson on the subjects of alcohol and tobacco, as affecting the growing body, has led to an extreme in which both are declared to be exceedingly dangerous to health, and almost useless as remedial agents.

The force of habit as applied to the general moral sensorium is too well known to the educated classes to admit of comment; but with this distinctly in view, and having ever before us the vile and oftentimes degrading results, brought about by the indiscriminate use of stimulants and narcotics, we can scarcely fail to condemn the method of teaching now in vogue. The purpose of all scientific training is the perception and recognition of truth in its broad and more general sense, irrespective of any attempt to influence one way or another those minds which can think for themselves, and hence are capable of drawing their own conclusions. As President Wilson of Princeton says: "Characters are by-products, and the minute you set yourselves to produce them, you make prigs of yourselves and render yourselves useless."

It is hardly likely that any ordinary boy is going to be deterred from smoking because his text-book tells him that tobacco-heart is sure to end his existence at an early age,—instead, he will probably be stimulated to "try it and see."

#### ECHOES AND NEWS.

##### NEW YORK.

**Reception of Dr. Mikulicz.**—Professor von Mikulicz of Breslau was tendered a reception by Dr. F. Kammerer of New York last Thursday, April 16. A large gathering of eminent men was present to greet this well-known surgeon. Professor Mikulicz has conducted a number of clinics here in the city, and on May 11 will be present at a meeting of the Academy of Surgery in Philadelphia.

**Officers of New York County Medical Association.**—The annual meeting of the New York County Medical Association met last Monday evening, and the following officers were elected: President, Alexander Lambert; First Vice-President, Francis J. Quinlan; Second Vice-President, S. Busby Allen; Secretary, Ogden C. Ludlow; Corresponding Secretary, John J. Nutt; Treasurer, Charles E. Denison; member of Executive Committee for three years, Frederick P. Hammond; member of Nominating Committee, Fifth District Branch, Parker Syms.

**T. Gaillard Thomas.**—At the meeting of the New York Obstetrical Society, held April 14, 1903, the following resolution upon the death of Dr. T. Gaillard Thomas, presented by the committee appointed at the last monthly meeting, was adopted:

"In paying its tribute of respect to the memory of T. Gaillard Thomas, the New York Obstetrical Society takes pride in the thought that he was one of the founders, several times its President, and for many years one of its most active and honored members. It is a pleasure to recall the various incidents and upward steps in his career, how he came to New York a poor young practitioner without friends, and with hardly an acquaintance, and how, by sheer ability he soon made himself felt, and left the impress of his personality wherever it was his destiny to labor. In his day he was a leading authority on all gynecological and obstetrical subjects. As an operator, he was facile princeps. He was not only theoretically the master, but his technic was unexcelled. Who, that listened to his lectures, was not impressed with the forcefulness of his style, and the breadth of his erudition. He has passed from among us, having reached the fore-front of professional eminence, satisfied and content, and rich in the rewards and honors of his career. It is proposed that these words be entered upon our minutes, and a copy be sent to the family and the medical journals." (Signed) Clement Cleveland, J. E. Janvrin, George Tucker Harrison.

**Manhattan Dermatological Society.**—Regular meeting held April 3, at the residence of Dr. E. L. Cocks. Dr. L. Weiss, presiding:

Dr. Gottheil presented a boy of eight years, with an eruption of flat, scaly papules, confined chiefly to extensor surfaces; new lesions appear in crops and disappearing leave marked pigmentation. The skin has never been entirely free; face remained clear, however; considerable itching, weeping and crust formation is present. Dr. Gottheil called it a chronic papular eczema of unusual manifestations. Dr. Oberndorfer was inclined to call it lichen scrofulosum. Dr. Cocks agreed with Dr. Gottheil. Dr. Whitehouse said the pigmentation was unusual for an eczematous condition, but would nevertheless call it chronic neurotic eczema. Dr. Bleiman stated he saw some resemblance to prurigo, although not typical; some features were lacking. The highly inflammatory nature of the eruption would exclude lichen scrofulosum. Dr. Pisko thought it a case

of mild prurigo. Dr. Abrahams thought the picture was strongly in favor of prurigo, although the general aspect of lesions made him coincide with Dr. Gottheil. Dr. Sobel was inclined to the diagnosis of chronic eczema; the symmetrical involvement and postauricular involvement favored such a diagnosis.

Dr. L. Weiss showed a man of thirty-two years, with a general pinkish macular eruption on body, present about five weeks and in its initial stage attended by slight languor and malaise. Presented as a case of pityriasis rosea. In speaking on the etiology of this condition he said that recent investigators could throw no light as to its mycotic origin, since positive evidence of the latter was still wanting. He regards pityriasis rosea distinct from herpes maculosus et squamosus; the former probably of reflex internal origin, the latter a mycotic affection and infection from without. Dr. Sobel stated that he studied many slides and cultures, with negative results.

The following 14 cases were presented, but no general discussion followed, owing to the lateness of the hour.

By Dr. Pisko, a young man with varicella-like papules scattered generally all over the body; present about seven weeks. The lesions dry up and leave deep excavated and depressed spots. The general opinion expressed that it was a case of acne necrotica. A second case presented by Dr. Pisko was one of psoriasis guttata; shown to illustrate an initial attack and to show how the condition looked before treatment. Dr. E. L. Cocks presented a man with Addison's disease, gastro-intestinal derangements; tachycardia and bronzing of the skin were marked symptoms. Under suprarenal extract to 73 grains per day, Dr. Ochs (who likewise observed the case) and Dr. Cocks both claim that the patient is improving somewhat. A second case by Dr. Cocks of tinea maculosus et circinatus. The lesions were general on body and extremities and showed raised margins with pale, healing centers, with slight scaling. Dr. I. P. Oberndorfer showed an elderly male, who two weeks ago presented a highly glazed, slightly indurated erosion on right side of nose, with small nodules around its periphery. It strongly resembled a superficial epithelioma; two weeks' treatment with 5-per-cent pyrogallol ointment, resulted in a complete cure; although some epitheliomata get well under this line of treatment, Dr. Oberndorfer is somewhat skeptical as to his former diagnosis. A second case by Dr. Oberndorfer a male, of thirty-five years, with an eruption of minute pale pink papules slightly desquamating, on body, upper and lower limbs; in the same condition for the past two weeks. He believes it resembles Kaposi's description of lichen acuminatus. Dr. A. Bleiman showed a male, about thirty-five years old, with an eruption on body and limbs, but especially marked along outer aspects of thighs and lower arms; it consisted of minute reddish papules, dry and slight scaling, closely grouped and gradually fading away into normal skin tissue; he called it a lichen pilaris.

Dr. W. S. Gottheil presented the following cases: Case of erythema multiform, chronic folliculitis of beard of eight years' duration; the left side of the face showed healing with atrophy and loss of hair; the right side represented the more acute stage of pustulation and induration. Case of chronic indurated eczema of the nates; eight years' standing and uninfluenced by any kind of treatment; recently results were obtained by the use of pure carbolic

acid applied to the areas. A case of lupus on lower right limb. About one year ago a lupus patch was excised from the left cheek; at that time the patch on limb was also present, its appearance has changed considerably since then, so much so that Dr. Gottheil hesitates in calling it lupus now.

Some of the members regarded it as a lupus, undergoing resolution; Dr. L. Weiss stated its appearance now suggested to him the condition of an atrophic lichen planus; a specimen of an indurated chancre excised in toto, many months ago; the patient, still under observation, as yet shows no secondary symptoms.

Dr. B. F. Ochs presented a case of lichen planus ruber; in order to prove his contention that the mother lesions of lichen could be produced by irritation upon a healthy area of skin in a patient affected with lichen, he made a pin scratch in the shape of a letter N upon the lower left arm. At this site a row of lichen papules developed ten days after the injury to the healthy skin. A second case by Dr. Ochs of lupus vulgaris; of interest was the unusual location on the left buttock; no other lesion present.

#### PHILADELPHIA.

**Dinner to Dr. Anders.**—Dr. James M. Anders, who is soon to be married, was given a dinner at the Hotel Bellevue Saturday evening, April 18, by his colleagues on the staff of the Medico-Chirurgical Hospital. Dr. John V. Shoemaker acted as toastmaster and the fourteen hosts responded in words befitting the occasion.

**Department of Health and Charities.**—It is rumored that Dr. John V. Shoemaker will be appointed the first director of the Department of Health and Charities, which was recently created by consolidating the Department of Charities and Correction and the Bureau of Health. Dr. Shoemaker has served as President of Board of Directors of the Department of Charities and Correction, and was largely instrumental in bringing about the consolidation.

**Ray Bill Fails to Pass the Senate.**—The Ray Bill, designed to raise the standard of education among physicians in Pennsylvania, has been shelved by the State Senate after passing the House by a vote of 126 to 13. It is claimed that some of the lower standard medical schools, through their political influence, succeeded in killing the bill.

**Roof Garden Opened by Rush Hospital.**—The Rush Hospital for Consumption and allied diseases has opened a pavilion on the roof of the institution. This provides ten more beds for the overcrowded hospital, and is intended for patients in the incipient stages of the disease. The capacity of the institution is now 45 patients, the country branch at Malvern accommodating 18 more.

**Complimentary Dinner to Dr. Flexner.**—The colleagues of Dr. Simon Flexner, on the staff of the University of Pennsylvania, and a number of professional friends to the number of fifty, gave him a complimentary dinner at the University Club April 16. Dr. S. Weir Mitchell presided and responded to the toast "The Scientific Spirit in Medicine." Toasts were also responded to by Drs. A. C. Abbott, H. A. Hare, W. M. L. Coplin, and J. G. Clark.

#### CHICAGO.

**Urgent Needs of the Children's Hospital.**—Sharp criticism of the expense of conducting Chicago's charities and equally severe condemnation of the City's inadequate facilities for caring for sick children were meted out with unsparing hand by Drs.

John B. Murphy and Isaac A. Abt at a recent conference of the Children's Hospital Society. It is estimated that from 30 to 64 per cent. of the money contributed to Chicago organizations for charitable purposes is spent upon salaries and expenses. One well-known institution which receives \$300,000 a year, spends \$119,000 of this sum in salaries. Another, which has contributions amounting to \$116,000, spends \$44,000 a year for salaries and administration expenses. The sole institution which appears to be an exception to this rule is the United Hebrew Charities. This organization received last year collections amounting to \$156,000, and spent but \$4,241 of this amount in salaries and expenses. Dr. Murphy's criticism was uttered in an appeal for funds, which he made on behalf of the Children's Hospital Society. The speaker stated that the only expenses of this institution were a stenographer's salary, and \$16 per month for room rent. He said that under an economical administration the cost of giving a sick child proper medical treatment could be reduced to \$3.50 a week.

**Investigating Committee Report.**—In reporting for the Investigating Committee of the Children's Hospital Society, Dr. Isaac A. Abt announced that the nine physicians composing this body had spent two months in looking into local facilities for the care of sick children, and had found out that no children's ward or hospital in the city had been constructed with the best knowledge of hospital sanitation and construction. Out of 27 institutions examined, but 18 maintained children's wards. The majority of these are overcrowded, containing insufficient air space, and being deficient in ventilation. Nothing in the investigation was more striking than the lack of provision for contagious diseases, both those which arise inside the hospitals and those originating outside their walls. A hospital for the exclusive care of infants was advocated, as well as the appointment of an expert milk commission, which shall have power to furnish certificates as to the quality of the milk sold by dairymen who complied with its sanitary requirements. Rev. Dr. Gunaus announced the endowment of three hospital beds for children by the congregation of the Central Church, and said that in his opinion this cause was more worthy of support than the Thomas Orchestra Fund.

#### GENERAL.

**An Interesting Medicolegal Case.**—The Western Union Telegraph Company is being sued for \$2,000 damages by Dr. Howard A. Kelly in the Superior Court for alleged negligence in failing to transmit two telegrams to Dr. Kelly on the night of October 12, 1902. On the night in question, the declaration states, Dr. Kelly was on the Federal Express, a through train, which left Boston at 7 o'clock for Baltimore. One of the telegrams was filed in Baltimore at 8 P.M. and was directed to Dr. Kelly at New Haven, Conn. The other telegram was filed in Baltimore at 11.57 P.M. and was directed to Dr. Kelly at Trenton, N. J. The telegrams directed Dr. Kelly to take the morning train the next day for Cambridge, Md., for an important operation. Through the gross negligence and carelessness of the telegraph company, it is alleged, the messages were not telegraphed, and Dr. Kelly was thereby prevented from performing the operation.

**Fourth Pan-American Medical Congress.**—At a meeting of the International Executive Committee of the Pan-American Medical Congress, held April 1, 1903, it was decided to accept the proposal of the Argentine Republic to hold the Fourth Pan-American

Medical Congress in Buenos Aires in 1905, instead of 1903, as had been announced in their invitation of February, 1901. This was considered by the Committee much more advantageous for the meeting, as it has long since been realized that it would have been impossible to have had a good representation of the delegates from this and other countries, had the convention been held there in June of this year. The meeting of the American Medical Association in New Orleans and of the Congress of Physicians and Surgeons in Washington would have prevented a number of physicians of this country from attending; while the meeting of the International Medical Congress in Madrid would have probably attracted many from the Spanish-American countries who would otherwise have been disposed to have taken an active interest in it.

**Salt in Pathology.**—We have just passed through an epidemic of salt pathology theories, and now a new one turns up, this time a propos of cancer. Capt. Rost of the Military Medical Service, who has been investigating malignant cancers bacteriologically at the Rangoon Hospital for three years, announces what is believed to be an important discovery. He has found in both carcinomata and sarcomata cancers distinct germs of *saccharomyces*, which can only develop when the natural chlorine in the tissues falls below the normal quantity. Following this clue, Capt. Rost devised a treatment to reinforce the chlorine by special diet, enabling large quantities of common salt, which contains chlorine, to be absorbed. He has experimented with eight patients. One was completely cured and the condition of the others was improved. He will continue his experiments.

**The West Virginia State Medical Association.**—This Association will hold its thirty-sixth annual meeting at Charleston, W. Va., May 26, 27 and 28, 1903. The scientific, business, and social programs will be of unusual interest and attraction this year. A representative of the American Medical Association will be present. It is hoped that every member who can at all do so will attend this meeting. Titles of papers, to appear on the program, must be in the hands of the Secretary before May 11, 1903.

**American Academy of Medicine.**—The twenty-eighth annual session of the American Academy of Medicine will be held at the Arlington, Washington, D. C., on Monday and Tuesday, May 11 and 12, 1903. The following papers have been promised: The Home Life and Education of Our Girls as Affecting Their Future Health, by James H. McBride, Pasadena, California. Symposium on The Teaching of Hygiene in the Public Schools. The Teaching of Personal Hygiene, by Walter L. Pyle, Phila., Pa.; Hygiene vs. Anatomy and Physiology, by Geo. G. Groff, Bucknell Univ., Lewisburgh, Pa.; The Teaching of Physiological Breathing, by G. Hudson-Makuen, Phila., Pa.; Hygiene as Related to the Causes and Prevention of Tuberculosis, by A. Mansfield Holmes, Denver, Colo.; The Teaching of School Hygiene, by Helen C. Putnam, Providence, R. I.; The Michigan Method of Teaching Hygiene, by V. C. Vaughan, Univ. of Michigan; The Training of Teachers, by Thos. D. Wood, New York city. Address of President. "Muck-Rake" Methods in Medical Practice, by Charles McIntire, Easton, Pa.; Social Dangers of Gonorrhoea, Especially in Relation with Marriage, by Prince A. Morrow, New York city. Symposium on Required and Elective Studies in the Medical Course. Anatomy, by Frederic H. Gerrish, Portland, Me.; Pathology, by

Wm. H. Welch, Baltimore, Md.; Internal Medicine, by S. G. Bonney, Denver, Colo.; How Much Knowledge of Special Branches Should be Required for Graduation, by L. Duncan Bulkley, New York city; A Theory and a Condition, as Illustrated by Ophthalmology, by Edward Jackson, Denver, Colo. General Discussion. The Influence of the Doctor on the Birth Rate, by S. G. Curtin, Phila., Pa.

**American Urological Association.**—Amphitheater of the New Orleans Polyclinic, May 8 and 9, 1903. President's address: The Present Status of Urology in the United States, by Ramón Guiteras, New York. Exhibition of patients; demonstration of specimens, instruments and appliances. Some Aspects of Urinary Diseases from a General Practitioner's Point of View, by William H. Thomson, New York; Tuberculosis of the Kidney, by Robt. T. Morris, New York; The Conservative Treatment of Some Surgical Diseases of the Renal Pelvis and the Ureter by the Ureterocystoscope, by F. Kreissl, Chicago; Cysts of the Kidney, by A. H. Golet, New York; Remarks on Some Cases of Renal Surgery, by Charles G. Cumston, Boston; Diagnosis of Renal Calculus, by Alex. B. Johnson, New York; The Effect of Stricture on the Upper Urinary Tract, by Winfield Ayres, New York; Pro and Con Nephropexy, by A. E. Gallant, New York; The Diagnosis of Tuberculosis of the Kidney and Ureter, by J. Wesley Bovée, Washington; Simultaneous Catheterization of Both Ureters; Its Advantages. Technic with instrument, by Simon L. Elsner, Rochester; The Value of Rectal and Colon Irrigation in Nephritis, by Robert Coleman Kemp, New York; The Operative Treatment of Chronic Nephritis from the Viewpoint of the General Practitioner, by L. C. Begg, New York; The Comparative Value of Methods of Determining the Working of the Kidneys Prior to the Operation, by A. S. Boyd, New York; The Diagnosis of Impaired Functional Conditions of the Kidney, by John von Glahn, New York; The Present Status of Litholopaxy, by Wm. K. Otis, New York; Choice of Operations in Vesical Calculus in the Female, with Description of Technic, by E. H. Grandin, New York; Cystoscopy in the Service of Gynecology, by G. Kolischer, Chicago; Sacculated Bladder, by Joseph B. Bissell, New York; The Result of the Local Treatment of Ulcers of the Bladder, by Louis E. Schmidt, Chicago; Retention of Urine, by Ferd. C. Valentine and T. M. Townsend, New York; Results Obtained by Galvano-caustic Prostectomy for the Treatment of Prostatic Hypertrophy, by Willy Meyer, New York; The Effect of Prostatic Diseases on the Urinary Tract, by John Van der Poel, New York; Perineal Excochleation of Hypertrophied Prostate without Opening Urethra or Bladder, Unsatisfactory Result, by Joseph Rilus Eastman, Indianapolis; Report of a Case of Sarcoma of the Prostate, Operated by Enucleation; Recovery without Recurrence. Death four years afterwards from other causes, by Granville MacGowan, Los Angeles; The Frequency of Prostatic Involvement in So-called Mild Urethritis, by Walter B. Brouner, New York; The Relation of Chronic Prostatitis to Urethritis and Cystitis, by L. W. Bremmerman, New York; Urethral Tuberculosis, by Arthur L. Chute, Boston; The Urethroscopic Treatment of Posterior Urethritis, by H. F. Nordemann, New York; The Clinical Value of Urinary Analysis, by Louis Heitzmann, New York; An Improved Method for the Determining of Indoxyl-Potassium Sulphate in Urine, by Heinrich Stern and Gustave M. Meyer, New York; Chorda Venerea, by Guy S. Peterkin, Seattle;

Reflex Skin Eruptions from Urethral Disturbances, by August Ravagli, Cincinnati; Herpes Due to Urinary Derangements, by Ferd. C. Walsh, Washington, D. C.; Are We Becoming More Conservative in the Treatment of Urethral Inflammation? by A. L. Wolbarst, New York; A Contribution to the Prophylaxis of Venereal Diseases, by G. Morgan Muren, Brooklyn; The Value of Climate in Urinary Disturbances, by W. H. Prioleau, Asheville.

**American Neurological Association.**—The program of this Society, holding its next annual meeting at Washington, May 12, 13, 14, is as follows: Tuesday, May 12, presidential address, Dr. J. W. Putnam, of Buffalo. Other papers are: The Sign of the Orbicularis in Peripheral Facial Paralysis, by Dr. George W. Jacoby, of New York; Contribution to the Study of the Achilles Reflex and the Front Tap, by Dr. George L. Walton and Dr. W. E. Paul, of Boston; The Reflexes in Long-distance Runners, by Dr. Philip C. Knapp and Dr. J. J. Thomas, of Boston; Report of a Case of Aneurism of the Descending Thoracic Aorta Mistaken for Pott's Disease, with Autopsy, by Dr. Charles W. Burr, of Philadelphia; Polioencephalomyelitis and Allied Conditions, by Dr. Edward W. Taylor, of Boston; A Case of Acute Degeneration of the Spinal Cord with an Ascending Type of Paralysis, by Dr. D. J. McCarthy and Dr. Wm. E. Hughes, of Philadelphia; Two Cases of Multiple Tumors of the Brain and Spinal Cord, and One Case of Primary Sarcoma of the Spinal Cord, by Dr. William G. Spiller and Dr. William F. Hendrickson, of Philadelphia; Three Cases of Spinal Cord Tumor Treated by Operation, by Dr. J. J. Putnam and Dr. J. W. Elliot, of Boston; Two Cases of Brain Tumor, with Operations. Recovery and Ultimate Death, by Dr. C. Eugene Riggs, of St. Paul; A Cerebellar Tumor; Operation; Recovery, by Dr. Frank R. Fry, of St. Louis; Central Neurofibromatosis: A Contribution to the Study of Tumors of the Medullo-Ponto-Cerebellar Angle, by Dr. Joseph Fraenkel and Dr. James R. Hunt, of New York; A Case of Progressively Developing Hemiplegia, Later Becoming Triplegia, Resulting from Degeneration of the Pyramidal Tracts, by Dr. Charles K. Mills and Dr. William G. Spiller, of Philadelphia; Chronic Progressive Hemiplegia, by Dr. Hugh T. Patrick, of Chicago; A Case of Progressively Developing Left Hemiplegia, Followed by Progressively Developing Right Hemiplegia, with Exhibition of the Brain, by Dr. Graeme M. Hammond, of New York; Flaccid Paralysis Following Cerebrospinal Meningitis, by Dr. William N. Bullard, of Boston; Cases of Alexia, by Dr. Philip Zenner, of Cincinnati; Two Cases of Hysteria Presenting Marked Symptoms of Insanity, by Dr. Theodore Diller, of Pittsburg; The Principles Underlying Practice in Mental Therapeutics and Legal Regulation of Its Practice, by Dr. Richard Dewey, of Wauwatosa; The Neurasthenic Neuralgias, by Dr. Frank K. Hallcock, of Cromwell; The Intracranial Complications of Middle-ear Suppuration, by Dr. Wm. M. Lesszynsky, of New York; Modern Theories of the Emotions and Their Bearing on Mental Derangements, by Dr. Henry Upson, of Cleveland; Paralysis Agitans. Complicated with Delusional Mania, by Dr. John Punton, of Kansas City; Atypical (One-sided) General Paralysis, by Dr. Adolf Meyer, of New York; Report of Two Cases of General Paralysis with Focal Symptoms; Autopsy in Both Showing Hemiatrophy of the Brain, by Dr. A. Hoch, of Waverley; The Facial Reflexes, by Dr. Charles L. Dana, of New York; The Impor-

tance of the Plasma Cell in the Cortical Vessels in Dementia Paralytica, by Dr. Stewart Paton, of Baltimore; A Case of Cerebral Tumor in which Muscular Atrophy and Astereognosis were Prominent Symptoms, by Dr. Morton Prince, of Boston; Bony Sensibility, by Dr. Philip C. Knapp, of Boston; Intense Double Optic Neuritis Without Assignable Cause, by Dr. Howell T. Pershing, of Denver; Remarks on Astereognosis, by Dr. William N. Bullard, of Boston; The Importance of the Nerve Centers in Pulmonary Consumption, by Dr. Thomas J. Mays, of Philadelphia; The Limits of Non-physical Therapy, by Dr. Smith Baker, of Utica; Demonstration of Certain Points Regarding the Development of the Neuro-fibrils in the Nerve Cell, by Dr. Stewart Paton, of Baltimore; Cases of Poisoning with Morphine and Atropine, by Dr. Philip Zener, of Cincinnati; Two Cases of Insular Sclerosis, with Demonstration of Specimen, by Dr. G. D. Putnam, of Boston; A Case of Lower Arm Type of Paralysis Dating from Birth, by Dr. John J. Thomas, of Boston; The Cerebral Origin of the Knee-jerk, by Dr. J. W. Courtney, of Boston; On a Cervical Type of Spinal Syphilis Closely Resembling Syringomyelia, by Dr. B. Sachs, of New York; Paralysis Agitans in Early Life, Complicated by Symptoms Suggestive of Multiple Sclerosis, by Dr. B. Sachs, of New York; The Work of a Large Dispensary Clinic, by Dr. Smith Ely Jelliffe, of New York, and L. Pierce Clark.

**Wouldn't be Vaccinated; Dies.**—Health Department officials are pointing to the death of Charles Stevens to-day as a signal instance of the fallacy of the anti-vaccination position. As secretary of the Anti-Vaccination League of Milwaukee. Mr. Stevens had steadfastly refused to be vaccinated. It is regarded as a significant fact that the attack to which Mr. Stevens succumbed was the most malignant case of smallpox on record in that city. From the first the physicians entertained scarcely a hope of saving him. Mr. Stevens had frequently denounced vaccination as a barbarous practice, entirely without efficacy in either preventing or staying the progress of smallpox.

## CORRESPONDENCE.

### TRANSACTIONS OF FOREIGN SOCIETIES.

#### British.

#### MULTIPLE MYELOMA WITH BENCE-JONES PROTEID IN THE URINE—SOME CONDITIONS SIMULATING APPENDICITIS WITH CASES OF APPENDICULAR ABSCESSSES IN UNUSUAL POSITIONS.

Dr. F. PARKER WEBER, at a meeting of the Royal Medical and Chirurgical Society, held March 10, 1903, read an account of a case of multiple myeloma with Bence-Jones proteid in the urine. He said that the patient, a rather fat man, aged fifty years, complained of rheumatoid symptoms commencing about the end of the year 1899. About February, 1900, he began to suffer from pains in the loins and stiffness in the small joints of his hands. Soon afterward the upper part of his back began to bend, so that he always had a stooping attitude. Previous to this illness the patient had been strong, but as a young man had had gonorrhœa and a chancre on the penis. One of his sisters suffered from diabetes mellitus. The urine of the patient was found to contain the Bence-Jones proteid. The daily

amount of the urine was about 2,000 c.cm., and it contained about 7 per mille of the proteid as measured by Esbach's albuminometer. By a more exact method (precipitation with alcohol, drying and weighing) Dr. R. Hutchison found that about 15 grams of the proteid were excreted daily. The reactions of the proteid were the typical ones described by Bence-Jones, Dr. Kuhne and Dr. T. R. Bradshaw. For some time the patient's condition remained fairly stationary, and at first, by the use of local massage, hot baths, etc., the power of bending his fingers was improved. Afterward the general weakness, cachexia and anemia greatly progressed and gummatous disease of the tongue and on one rib made its appearance. Examination of the patient's blood showed slight leucocytosis. In January, 1901, it was found to contain about 23 per cent. of the normal hemoglobin. In the cubic millimeter there were 2,980,000 red cells and 11,000 white cells (25.6 per cent. lymphocytes, 3 per cent. large mononuclear, 70.3 per cent. polymorphonuclear and 1 per cent. eosinophile). No myelocytes or atypical cells were detected among the leucocytes. On Jan. 25, 1902, the patient died after a copious hemorrhage from the intestines, which post-mortem examination showed to be due to chronic ulceration of the duodenum. The Bence-Jones albumosuria persisted to the last. At the necropsy the bone marrow of all the bones examined was found to be more or less affected by a diffuse sarcoma-like growth of rounded or polyhedral mononuclear cells, a form of "multiple myeloma" or "myelomatosis." A report on the microscopic characters of the new growth by Professor R. Muir was quoted. The presence in the tumor of cells containing granules and globules of various sizes constituted a striking histological feature in the present case. The new growth was confined to the bones and formed no localized tumors projecting from the bones, such as had been noted in some cases of multiple myeloma. In fact, neither by direct extension nor by metastasis were any other parts of the body involved. Dr. Hutchison and Dr. J. J. R. Macleod made a careful chemical investigation of the bones, blood and organs, but failed to find in any of these tissues or organs a body giving exactly the same reactions as those of the Bence-Jones proteid in the urine. From vertebrae and ends of the femur, however, they obtained a proteid giving very similar reactions, differing somewhat in the temperature at which it coagulated, and in not being redissolved on boiling. Moreover, no similar proteid could be obtained from normal red bone marrow.

They argue that in the present case the bone marrow was probably the seat of production of the proteid excreted in the urine, and that this proteid was not a non-assimilated digestive proteid as suggested by Magnus-Levy. Though the case was complicated with syphilitic gummatæ, chronic ulceration of the duodenum and a generalized rheumatoid affection of the joints, it was a typical one of multiple myeloma with Bence-Jones proteid in the urine, the "myelopathic albumosuria" of Dr. Bradshaw, in Italy called "Kahler's Disease." When the diagnosis was first made, it was probably the second case of the kind recognized *during life* in England, the first one being that recorded by Dr. Bradshaw in 1898. In the latter part of the paper various questions regarding multiple myeloma with and multiple myeloma without "Bence-Jones albumosuria" were discussed, and a summary was appended of all the hitherto recorded cases in which the Bence-Jones proteid had been detected in the urine, including certain cases in which no bone disease was discovered, and certain other cases in which the reactions of the proteid in the urine were not quite characteristic. Multiple

myeloma was regarded as a convenient term to include various forms of the new myelogenic growth. Two types were to be distinguished: (1) A growth like the present in which the bone marrow only was involved; (2) a growth in which nearly all the cells resembled small or large lymphocytes and in which lymphatic glands as well as bone marrow were affected. Taking all the data that could be obtained into consideration, Dr. Weber stated the following conclusions: (a) That Bence-Jones albumosuria was always the result of bone-marrow disease; (b) that it was due to an abnormal metabolic or degenerative process in the myelocytes or in the tumor cells derived from the myelocytes or their predecessors; (c) that the reason why it was not generally associated with myelogenic tumor formation was that the tumor cells derived from the bone-marrow cells, however much they might morphologically resemble true bone-marrow cells, were more prone to abnormality than real myelocytes, and (d) that non-myelogenic tumor cells were not affected in the same way and therefore metastasis tumors in the bone marrow did not give rise to Bence-Jones albumosuria like myelogenic tumors.

Dr. BRADSHAW of Liverpool said that when, five years ago, he first brought a case of myelopathic albumosuria to the notice of the society not more than six cases had at that time been described and at the present time no less than 32 cases had been recorded. He considered that myelopathic albumosuria should be recognized as a definite disease, distinct on the one hand from osteomalacia and on the other from multiple tumors in the marrow unattended by changes in the urine. He referred to a case of the disease at present under the care of Dr. J. Barr, in which sudden paraplegia and cystitis followed a feeling that "something had given way" in the back. He next dealt with the question whether the proteid was an albumose or an albumin. He said that in its chemical behavior it seemed to be intermediate between a native albumin and proto-albumose. The coagulum by heat was much more soluble than that obtained from native albumin and had been said not to be a true heat coagulum. The nitric acid reaction was identical with that of proto-albumose, and, on the other hand, it was not dialysable. The term "albumose" was applied by physiological chemists to bodies which differed considerably from one another in their chemical reaction. Thus one member of the group, hetero-albumose, was insoluble in distilled water, proto-albumoses were coagulated by nitric acid, and deuto-albumoses were not coagulated by nitric acid. The essential idea of an albumose was a proteid derived from albumin but with a smaller molecular weight and of less complexity than the latter. Now all the albumins commonly met with contained a hetero-albumose group or radicle and yielded hetero-albumose and other albumoses when digested, and it had been shown by Magnus-Levy that the Bence-Jones proteid did not contain the hetero-albumose and therefore was probably an albumose. He considered that it was probable that the new growth in the bones was the seat of the formation of the albumose. He pointed out that the disease more frequently affected males than females.

Dr. MACLEON said with regard to the exact chemical nature of Bence-Jones albumose that its chemical reactions would indicate that it belonged to the native proteid group rather than to the proteoses. The biuret reaction was of a distinct violet color, not a rose pink, which was characteristic of the proteoses. From its other reactions no definite opinion could be deduced. To decide whether the albumose proteid was derived from the gastro-intestinal tract or not, it would be necessary to restrict the proteids of diet to a greater

extent than had been done in Dr. Weber's case. By its chemical reactions its chemical nature could not be determined, but this in any future case might be done by injecting it into the blood of an animal and finding if a specific precipitin was developed.

Dr. W. LEE DICKINSON said that the occurrence of Bence-Jones albumosuria was characteristic of myeloma of the bones and did not occur in cases of osteomalacia, lymphadenoma of the marrow, or Hodgkin's disease. He referred to the excess of lime which was frequently found in the urine of diabetic patients and asked if any such excess had been found in this case.

Dr. FREDERICK S. EVE, at a meeting of the Medical Society of London, March 9, 1903, read a paper entitled, "Some Conditions Simulating Appendicitis with Cases of Appendicular Abscess in Unusual Positions." Five cases of tuberculosis of the cecum were related, the symptoms of which closely simulated appendicitis. All gave a history of recurrent attacks of pain, sometimes commencing suddenly. One patient was supposed for years to have suffered from gastric ulcer, the pain being referred to the epigastrium. In nearly all the cases constipation existed, but vomiting was not marked except in one instance. The chief point in which they differed from appendicitis was in the slight character of the local tenderness. A swelling of firm consistency, due to a thickened, indurated and contracted cecum was observed in all. The appendix was only found once and was not tuberculous. In one case observed by Mr. Eve in 1901 there was chronic obstruction and a short-circuiting operation was performed with good result. The condition had been mistaken, in one recorded case, for carcinoma, from which, however, it was distinguishable clinically by the absence of leucocytosis. Allusion was made to the difficulties in diagnosis in some instances between appendicitis and affections of the gall-bladder, kidney and intestine, such as carcinoma, colitis, and obstructions by a band in the right iliac fossa, cases being quoted in illustration. In appendicitis the localization of the pain and the position of the abscess were subject to great variations, owing to modification in the length and position of the appendix itself and vagaries in the position of the cecum and other abdominal organs. In one case the pain was referred to the right loin, owing to the tip of the appendix being attached beneath the liver and in another the pain was always localized in the left flank. Cases of appendicular abscess beneath the liver and about the umbilicus (owing to non-descent of the cecum or unusual length of the appendix) were related. Great difficulty might be experienced in distinguishing appendicular abscess within the pelvis from inflammatory and suppurative affections originating in the genital organs. A case of pyosalpinx was quoted in which the pain and tenderness were referred to the right iliac fossa and a case of suppurative ovarian cyst was related which had, for three years, given rise to attacks which were believed by several good observers to be due to appendicitis.

**Residual Urine.**—In old men with an enlarged median lobe of the prostate the base of the bladder is divided by a transverse dam into an anterior and posterior pocket. The former is drained by the urethra but the latter is not so drained in the upright position. H. E. HALE (N. Y. Med. Jour., Feb. 14, 1903) recommends a method by which some patients may easily void what would otherwise be residual urine thus avoiding cystitis and the necessity of catheterization. The patient is directed to void his urine twice daily while in the knee-elbow position. If the bladder wall has lost its tonicity no benefit will be derived.

## SOCIETY PROCEEDINGS.

## THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Stated Meeting, held Jan. 19 and Feb. 2, 1903.

**Case of Intussusception.**—Dr. Cullen introduced this patient, a boy of five years, who had typhoid at two years, diphtheria at three years, and diarrhea during the last summer. On Dec. 23 he was taken sick with dysentery. When seen by the physician at 11 A.M., Jan. 3, the abdomen presented nothing abnormal. At 11:30 there was a bloody stool and at 3 P.M. the classical sausage-shaped tumor appeared. The operation was done at 4:30 P.M. Fluid blood was found in the abdomen and 10 inches of the transverse colon was found invaginated in the ascending colon. There was a mass in the colon which, on examination, was found to be an inflammatory thickening. The colon was stitched to the abdominal wall to prevent recurrence.

**Tuberculosis of the Kidney.**—Dr. Cullen also presented this patient, a female with a history of cystitis. When examined a year and a half ago there was a redness about the right ureter and tubercle bacilli were found in the urine coming from it. There was normal urine on the left side. Dr. Osler found no signs of tuberculosis elsewhere in the body and the patient refused operation, went home and improved steadily. The patient has recently returned, however, and the kidney which was removed, showed very little renal tissue. She did well for four weeks after the operation, when her temperature rose to 104° F. and higher. No tubercle bacilli were found in the urine of the other kidney, nor were there signs of tuberculosis elsewhere. Two weeks later rose spots appeared and three days after that the typhoid serum-reaction was positive. Blood cultures were also positive. The only clue as to the source of infection is that during convalescence after operation the patient's father brought her a bucket of oysters packed in ice. She is now entirely well.

**Carcinoma of the Kidney.**—A third patient of Dr. Cullen is a female of twenty-six years, who was seen at Easton, Md. Six months ago she felt a small nodule in the abdomen and the tumor has grown rapidly. After an inspection of the other kidney a large carcinomatous kidney was removed.

**Hydronephrotic Kidney.**—A fourth patient of Dr. Cullen is a female who had "a fever" at two years, after which she was weak until puberty. A fulness then appeared in the left side which continued until she was twenty years old. During the last few years she has felt a mass in that side. At operation the ureter was found to be 1 mm. in diameter and no fluid could be passed through it. After determining that the other kidney was in good condition, the huge kidney, 30 cm. long, consisting of a great mass of cysts, was removed. The patient is doing well.

**Hematoma of the Abdominal Wall.**—In a fifth case of Dr. Cullen there was a mass 7.5x5 cm. above and to the right of the umbilicus. The diagnosis lay between a tumor of the pancreas, kidney and gall-bladder. At operation the muscles were found adherent to the tumor and 500 c.c. of tarry blood-clot escaped. A skin incision was made on the left and it was determined that the mass was extraperitoneal, lying between the peritoneum and the transversalis fascia. Gall-stones were found and removed. This is the first case which he came across in which there was hematoma without known origin and simulating an abdominal tumor.

Dr. Osler remarked that the hydronephrotic kidney must be clearly distinguished from the congenital cystic

kidney. In the former the obstruction might be intermittently overcome and the fluid allowed to flow.

**Removal of Foreign Bodies from the Eye.**—Dr. Randolph said that the first recorded use of the magnet for the withdrawal of foreign bodies was by McCowan in 1874. He made an incision over the sclerotic and used an ordinary magnet. In 1879 Hirschberg used an electromagnet for the first time. This was merely a magnetic probe and its point had to be near or in contact with the foreign body. It was used until 1893 when Haab introduced his giant magnet, weighing 200 pounds. The disadvantage in this is that the foreign body follows the shortest path from its position to the point of the magnet, frequently producing additional injury.

In the four cases here reported Sweet's modification of the method was used. He locates the foreign body accurately with the X-rays, makes an incision opposite to it and then allows the magnet to act. One of these cases was seen in June, 1902, the other three during the last few months. All the patients were employees of the Baltimore and Ohio Railroad. In three of the cases a general anesthetic was used, although it is said that cocaine may be used ordinarily. The great advantage in extracting early is seen from the fact that the men who were operated on, three or four days after the accident, have good vision, while one who was not treated for eighteen or nineteen days, has lost his sight. Even if the vision be not preserved it is a great advantage to have a slightly eyeball. Haab had reported 165 cases treated, 55 of whom are recovering their sight.

**Uncinariasis in Southern Cities.**—Dr. Stiles said that hookworm disease was described on the papyri of ancient Egypt. In 1893 Blickman of St. Louis described the first case in this country. It was imported and was due to *Uncinaria duodenalis*. In 1896 five or six cases were reported in Buffalo but were not fully authenticated. In 1898, when the war with Spain began, the Bureau of Animal Industry warned the War Department of the danger from hookworms, which was likely to threaten our soldiers in Cuba and Porto Rico. During that year Ashford found the typical anemia and eggs of hookworms in the stools in Porto Rico. He published 19 cases and warned the medical profession of the danger from soldiers returning home. As the troops returned from Cuba further cases were reported here and there, 35 in all having been published up to May, 1902. At this time a new parasite was described, almost simultaneously in Galveston, St. Louis, and Porto Rico. Permission was obtained from the government to thoroughly examine the triangular region, whose angles were at these three points. Four days were first spent at the Richmond penitentiary, where 1,200 men were seen but no cases detected. At one of the copper mines in North Carolina a case was found and from that point onward, throughout the mining country, a large number of typical cases were detected.

It is an interesting fact that the cases were always found in sandy soil, never in clay regions. This brings to memory that when the seal fisheries were such a subject of controversy between England and the United States, a study of their diseases shows that 17 per cent. of the seals died of *Uncinariasis* and that the pups always died on sand rookeries. Among the so-called clay-eaters in the sand hills of the South 40 cases were found in three days. One family of 11 clay-eaters were all affected with the disease. A study of the employees of the cotton mills of Macon, Georgia, showed that the children who came from sandy districts were the only ones affected and that their anemia, which had been striking when they came to the mills, had steadily de-

creased after they went to work. Very few cases were found in negroes. After a short experience in observing the typical appearance of persons affected with *Uncinariasis* it became possible to pick "suspects" out of a large crowd without any difficulty. In an orphan asylum which was visited, the children were lined up in two rows and by merely walking down through the lines it was possible to pick out suspects and by examining their feces later, determine the presence of the disease.

The result of the trip may be summed up as follows: (1) *Uncinariasis* is preeminently a disease of the sand-hills; (2) the cases occur in groups like those of *Trichinosis*; (3) it is more severe in whites; (4) although usually described as a disease of adult males, the severest cases on this trip were found in women and children; (5) infection is severer in summer; twenty-four hours of freezing temperature kills the eggs and larvae; (6) miners, farmers, brickmakers and children are most often affected; (7) it is severer in blondes.

In regard to the symptoms the cases may be grouped as light, medium or severe. (a) The light cases are apparently well but have eggs in the feces. They may have diarrhea but their most striking symptoms are that they cannot work long or walk far without becoming tired. (b) The medium cases show little more than an anemia which resembles other secondary anemias. (c) The severe type of cases were well described in 1868 by Pitt, who wrote about the clay-eaters of the South. The patients are undergrown, stunted both physically and mentally, the complexion is either a chalk-white, lemon-yellow, or tan, presenting the same features that may be seen in pernicious anemia. The skin is like parchment. There is grave anemia of all the visible mucous membranes, the eye is dry and has a cadaveric, fish-like stare, like that seen in alcoholics. This was described as early as 1835 by Southern writers. The cases can be distinguished from those of other anemias by the appearance of the eye alone. The expression is something like that seen in the eyes of a patient suffering with an epileptic attack. In this connection it is interesting to note that the negro "mammies" of the South depend on the dilatation of the pupil for the recognition of the presence of worms. It seems likely that there is a condition of toxemia. Italian observers have noticed that the urine of patients affected will produce anemia in animals, so that we have to deal with the toxemia as well as with the anemia. The pulsation of the veins in the neck can be seen and the patients often complain of "a jumping at the neck." The ribs are prominent, the thorax emaciated, the abdomen swollen and edematous. Hair is absent on the body except on the head, the pubes and legs being quite smooth. The extremities are emaciated and the legs, especially about the ankles, edematous. The testicles are rudimentary, the penis very short. In a boy of sixteen years, for instance, the testicles may not have descended. The breasts of a girl of twenty years are like those of a girl of eleven years and the vulva like that of a girl of nine or ten years. As to the digestive system the appetite is either ravenous or light. There is usually some idiosyncrasy, the patient having a great leaning toward pickles, lemons, salt, resin or even clay. In one case the patient was known to have eaten live mice. Indigestion is common and is accompanied by pain in the epigastrium. The stools are reddish brown.

As to the diagnosis it would be foolish to expect the rural practitioner to use the microscope. For him the following test has been devised and will give a correct result in 70 per cent. of the cases. One ounce of the feces are placed upon a piece of blotting paper and then shaken off. If the patient have hookworm disease,

the paper is stained red-brown, as if with blood. There may be either diarrhea or constipation.

As to the circulatory system the pulse was found anywhere between 80 and 132, frequently 120, unaccompanied by a rise of temperature although occasionally there was a rise to 102° to 103° F. There is marked venous pulsation and hemic murmurs are often heard. It was impossible to make a blood count on this trip.

*Skin.*—Ulcers on the legs are frequent. If cut or bruised, the skin wound heals very slowly.

*Nervous System.*—Usually stupid, the patients are in addition, either shy or excitable. They have headache and some dizziness and are generally unable to study.

*Genital System.*—There is irregular menstruation, many girls attaining the age of twenty-two years before its commencement. Girls of twenty-six years were found who menstruated only in winter. Sterility is evidently unimpaired, for in the sand-hills many families were found with from three to twenty children.

It is not true that the diagnosis can only be made with the microscope. If there be a clay-eater in the family and several in the family have anemia, if they live in sandy soil and if there be no privy, you are safe in saying that the whole family has *Uncinariasis*. With a little practice you can make a diagnosis in 75 per cent. of the cases, especially if the blotting-paper test be used.

*Treatment.*—Thymol and male-fern are the two drugs used, the former being preferable. Two grains of thymol are given at eight and again at ten, followed by a dose of castor oil at twelve. These may be repeated in a week. With regard to the administration of thymol in brandy, it is known that a small dose thus given will throw a dog into convulsions, but there will be no harmful effect without the brandy. It is, therefore, safer to give the drug in powder form.

*Prophylaxis.*—(1) *Uncinariasis* is a disease of the country, not of cities, on account of the drainage facilities of the latter. (2) Dispose of the fecal matter in infected localities; this will prevent a spread of the disease. The simplest method of disposal is to spray the feces with oil and burn them. (3) Get the people in an infected locality to build privies, to use them and occasionally clean them.

February 2, 1903.

**Enucleation of Sarcoma of the Tibia.**—Dr. Bloodgood said that nine years ago the patient's leg was injured. Ever since then he has noticed pain and tenderness there and has had what he called "a game leg." Two and a half years before being examined he noticed a slight growing swelling in the leg, causing a uniform expansion of the tibia. The growth felt hard and was rougher than the shaft beneath it. The X-rays showed a soft tumor which at operation was readily shelled out of the surrounding bony tissue and was found to be a giant-celled sarcoma of the medullary cavity. The granular tissue in the wound was examined microscopically two weeks ago and no evidence of recurrence was found. At present bone formation may be observed in the granulation tissue. As giant-celled sarcomata contain no bone and no bone formation the outlook is good. Giant-celled sarcomata are the least malignant of all the types of sarcoma.

**Two Cases of Cervical Rib.**—Drs. H. M. Thomas and Harvey Cushing presented two cases. The first patient, a female, was admitted to the hospital May 21, 1902, complaining of curious nervous symptoms. She had had pelvic trouble subsequent to the birth of a child and had had double oophorectomy done. One year ago she commenced to have intense paroxysmal pains down the right arm. The arm became weak and

the hand atrophied. There was some trouble in the right leg. On examination the atrophy of the hand and the weakness of the arm were noted but no anesthesia was found. Electrical treatment was given, as if for a local neuritis but the pain became still worse and there were one or two so-called attacks of unconsciousness with convulsions. A lump developed on the right arm. At this point it was thought that there might be a tumor pressing on the nerve roots. Eventually anesthesia developed in the right arm and sensation in the right leg was also impaired. When examined by Dr. Cushing the anesthesia extended to the face and chest. There was thus a hysterical paralysis accompanied with local disturbances. The pupils were normal. There was reaction of degeneration in the right thumb and first interosseous muscle. At operation a cervical rib was found with a fibrous band extending from its tip to the first thoracic rib, pressing on the brachial nerves. On the day after the operation the anesthesia entirely disappeared; the motor power, however, has not yet returned.

The second case is that of a female, twenty-one years old, who has noticed a weakness in the right arm since she was seven years old. She ascribed this to carrying a heavy umbrella. Her arm was completely paralyzed for three months and then slightly recovered. Two years ago the right hand began to waste, but it could be used for sewing until two weeks ago. On examination nothing was found except atrophy and weakness of the right hand. The pupils were equal. The extensors of the right forearm were weak, the strongest muscles being on the radial side. There was a definite disturbance of sensation along the ulnar border, reaching almost to the axilla, the patient being unable to distinguish between the head and point of a pin. Electrically it was difficult to get any response except from the radial flexor. To summarize, there is a widespread paralysis of the forearm muscles supplied by the first thoracic as well as by the eighth cervical and second thoracic. The diagnosis lies between (a) acute anterior poliomyelitis; (b) syringomyelia; (c) and an acute lesion in the brachial plexus, due perhaps to hemorrhages, as suggested by Buzzard (Brain, 1902). The X-rays show, if not a rib, at least an enlarged transverse process extending from above the first thoracic vertebra.

**The X-rays at the Massachusetts General Hospital.**—Dr. Codman said that the results with the X-rays may be summarized as follows: Many disappointments; occasional success; much hope for the future. No patients are more zealous or more hopeful than those who come for X-ray treatment. The therapeutic X-ray work has had some remarkable results. Of the deep malignant tumors, treated thus, few have been improved, none cured and some helped by softening of the growth, which was accompanied by a gain in the patient's weight. Of epitheliomata, 100 have been healed or are healing. In April, 1902, Dr. Warren operated for a cancer of the tongue and in May the X-rays were started for prophylaxis and were used until a dermatitis was set up, which prevented a further use. In a case of cancer of breast which had seven spots of cutaneous recurrence, five of these were cured and two are healing. Two cases of cancer of bones were unsuccessfully treated, one of the patients being eighty years old. One year ago it was definitely stated that deep malignant growths could not be cured by X-rays unless they had reached the skin and caused ulceration. Three months ago, however, Dr. Warren operated for a sarcoma of the sternoclavicular region. The pathological report of the tumor stated that it contained small round cells with occasional muscle cells and much karyokinesis. It may, therefore, have

been syphilitic or a chronic inflammation. When first treated with the X-rays, however, there was a mass  $5 \times 2.5$  cm. present; now absolutely nothing abnormal can be seen. Another case of sarcoma of the clavicle was made worse by the X-rays.

Lupus, psoriasis, and eczema have been healed as if by magic, although in some cases there has been recurrence elsewhere. There are many reasons for believing that the therapeutic effect of the X-rays is due to their stimulation of the nutrition of the parts involved rather than to their attacking the malignant growth. The chief reasons are: (1) the action is very slow, often not being manifested for weeks; (2) there is primary stimulation of the skin, evidence of which is seen in the exfoliation and hyperemia; (3) in a cancer there is frequently no destruction of the tumor but a degeneration of its center; (4) the shrinking of the malignant cells may be due to the activity of the surrounding tissue; (5) as in the case of eczema due to varicose veins, stimulation of the circulation causes healing; (6) the activity of the malignant cells is of a kind that would be helped rather than hindered by the stimulation.

Our method of treatment will depend upon the theory we adopt. My rule is to make exposures for ten minutes at a distance of ten inches twice a week until hyperemia appears or until the end of the third week. Never allow a burn of the skin to occur. A dermatitis is usually caused in two weeks, it being usual to see a hyperemia after 40 to 100 minutes' total exposure at ten inches. Psoriasis and eczema disappear sooner. The epithelioma begins to be destroyed at the onset of the hyperemia. Great care must be taken not to destroy tissue, for there are already two cases on record in which cancer developed in the site of an X-ray burn. It seems probable that in certain cases of cancer of the breast the X-ray will bring great relief.

Dr. Halsted said that in a case of cuirass cancer Dr. Williams, of Boston, obtained very great improvement with the X-ray. In another case a cancer of the breast was evidently improved under treatment when a burn occurred. After several weeks without treatment the cancer disappeared, supporting Dr. Codman's theory that the therapeutic effect of the X-rays depend on stimulation of the nutrition. It seems possible that we may be wise in exposing a cancer of the breast to the X-rays directly after operation, perhaps while yet on the table.

Dr. Bloodgood spoke of a case of epithelioma of the lip,  $1 \times 0.5$  cm. in diameter, which had lasted one year, was treated with the X-rays and although there was no increase in its size for a year, still the superficial ulceration remained. The tumor was excised by Dr. Finney. It did not look like an epithelioma and the microscope showed practically no epithelial invasion but only granular tissue.

**The Physics of the X-rays.**—Professor Ames said that many years ago Clark Maxwell said that great light would be thrown on the nature of electrical waves by the study of discharges in vacuum tubes. Crookes made such a tube and demonstrated cathode rays. Roentgen, of Würzburg, went further and proved that (1) the radiations from vacuum tubes containing cathode rays have both photographic and electrical effects; (2) there is a radiation from any surface upon which the rays impinge; (3) the rays go in a straight line and their penetrating power, depends upon the atomic weight of a given subject. If a target be joined to the anode there is greater radiation.

Three men, Lehmann, Stokes and Thompson have recently contributed greatly to our knowledge of the rays. Thompson thought the disturbance was due to the discharge of minute bodies from the cathode, trav-

eling perhaps at the rate of 60,000 miles a second. It has recently been shown that there is really no matter in motion but only an electrical change. The X-rays are not waves but irregular pulses, or rapid disturbances of the ether. To work for increasing length of spark is in the wrong direction. What is needed is to seek greater volume of current.

#### THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

##### SECTION OF CLINICAL MEDICINE AND SURGERY.

*Stated Meeting, held Feb. 6, 1903.*

**Case of Cretinism.**—Dr. Hirsch exhibited this patient, a girl five years old, when brought to the Maryland University Hospital. Her uncle died of tuberculosis, one aunt died of goiter and two cousins were affected like the patient. Her father and mother are well. The patient herself was delivered with instruments, had her first tooth at eight months but made no effort to stand or walk even when considerably more than a year old. On examination she was found to be dull and even idiotic, the eyelids flat, the alæ nasi dilated, the skin thick and dry, the teeth decaying, the canines and anterior molars being absent. There was a downy growth on the back. The abdomen was protuberant. Speech was indistinct and the patient was unable to walk unaided. Thyroid treatment was commenced at once, the patient receiving half a grain at first and later two grains three times a day. Improvement was noticed in four weeks, at which time she could stand like a child of a year old. Three months later the skin had lost its harshness, the abdomen was less prominent, she had grown 5 cm., and her mental condition had markedly improved. At the present time, a year and a half since commencing treatment, she is like any other child of six years, having grown 22 cm. during that time, her mental improvement being the most striking thing. Her alæ nasi are still dilated but the presence of adenoids may particularly account for this. The patient now received nine grains of thyroid daily. As is well known there are three groups of cases pathologically: (a) gland absent; (b) gland atrophied; (c) sporadic cretinism with goiter.

Dr. Osler asked how far and how long the treatment should be continued. He had a recent visit from a case of sporadic cretinism whom he first saw ten years ago. The patient was then a child of three or four years. At that time she was a driveling idiot. She is now a girl of fourteen years, well grown and well nourished. On one occasion the thyroid treatment was omitted for eight or nine months with very marked retrogression. Probably, as in cases of myxedema, the treatment must be lifelong. Some of the cases are doubtless cases of thyroid insufficiency.

Dr. Atkinson confirmed the opinion that the treatment had to be kept up constantly and thought it would be best to give it every day.

**Case of Multiple Sclerosis.**—Drs. Preston and Hirschberg introduced this subject. Spiller reported 10 cases of multiple sclerosis among 3,000 cases of nervous diseases. At Bellevue Hospital, where 12,000 cases are treated each year, there are usually one or two of this disease. Sachs expresses the opinion that it is not as prevalent in Europe as generally thought. Of 126 cases reported in the literature, 31 had a former history of importance. The disease occurs most frequently between the ages of sixteen and forty-five; it is occasionally congenital. About one case in two years is the incidence of the disease at the City Hospital.

The present case is that of a male, thirty-four years old, a fireman, who was admitted Dec. 14, 1902, complaining of vertigo and nervousness. His mother died of cardiac disease; one brother of concussion of the brain, two of lead-poisoning. The patient has had typhoid fever, but no trouble with his eyes or speech and no venereal or cutaneous diseases. Before the present illness he was a miner, using whisky to excess, also gin and crude alcohol as much as a pint a day of the latter, emptying his miner's lamp for this purpose. Seven years ago, while working in a mine, a heavy piece of slate fell on his head. He was unconscious for 12 hours and dazed for three weeks, being in bed all the time. For two years he was more or less dizzy, but was quite clear mentally. Then the dizziness began to increase and was associated with headache and vertigo, increased by exertion. Two or three times a week he fell over during a dizzy turn, usually backward. He was never unconscious. He feels a pressure like that of a vise on the back of his head and then a reeling sensation and the ground seems to be pulled away from him. His hands seem thick and vision appears blurred, objects being seen double and triple; the knees and legs are weak and the muscles stiff. His speech has been thick and more deliberate since the injury and is worse during the attacks of dizziness, which lasts ten minutes longer if in a crowd. During the intervals he has a dull headache but no vomiting. His head feels hot and swollen and he has to wear glasses for nearsightedness. He has difficulty in bringing a glass to his lips because of the swaying of his hands, especially the left hand. He walks unsteadily, fearing he will fall, as he is very apt to do if he turns rapidly. His fingers grow stiff when he writes and the letters are irregularly formed. His memory is poor and he is absent-minded. He sleeps well but has to rise several times for micturition each night. He finds himself laughing very easily at light thoughts passing through his mind and at other times he has periods of uncontrollable pereverishness and irritability without any cause. There has been no paresis but occasional neuralgic pains in the legs. No shooting or girdle pains; no ulcers or other trophic disturbance. He is constipated. On examination the patient answers intelligently, although not immediately. His memory is good for recent events only. In speaking he separates the syllables and jerks them out with irregular accent. There is a curious tremor of the tongue. There is no oscillatory nystagmus but there is vertical nystagmus. There is left internal strabismus; no optic neuritis or atrophy. There is a curious oscillatory tremor of the fingers when trying to touch his nose. This is worse in the left hand. The gait is jerky but not paraplegic; he walks as if pitching against something and almost falls if he moves rapidly. The knee-jerks are very active, the tendo Achilles reflex increased. No ankle clonus. No Babinski's reflex. His writing is forced and scratchy but the tremor is fairly well controlled. There is a slight tremor but no paralysis of the vocal cords. The urine contains a trace of albumin but no casts. His diplopia is quite marked.

Dr. Reuling suggests that this may have been a case of traumatic sclerosis. In a recent case which he had seen there was scanning speech and ataxia. The patient had attacks of mutism when for 12 to 24 hours he could not speak. He had also paresthesia on the same side as that of the injury. There was a central scotoma.

Dr. Osler said that Bramwell recently commented on the greater frequency of multiple sclerosis in England than in the United States. In the National Hospital for the paralyzed and epileptics there are always three or four cases of the disease. It is not merely that the cases are overlooked in this country. We may mistake the disease for hysteria unless we have read Buzzard's

article. The ordinary typical cases are very rare. He saw more cases in Montreal in ten years than here in thirteen.

Dr. Hirschberg stated in conclusion that the patient had been improving and had shown no signs of melancholia. The fact that the disease had lasted seven years pointed to its being organic.

**Poisoning by the Castor-oil Bean.**—Lieutenant Bispham said that while at a prison-post in Cuba he was called one night and found two dozen prisoners all complaining of nausea and vomiting, none of them, however, seeming to be particularly ill. Three of the cases may be mentioned in detail: The first was admitted to the hospital on Jan. 6, having eaten 14 beans on the evening of Jan. 4. He felt sick after supper and became nauseated and vomited at 10 o'clock; he had cramps in the region of the liver and in the limbs all night. Temperature 99° F., pulse 70, urine normal. The treatment consisted of hot-water bottles and morphine. Recovery in three days. The second patient entered on Jan. 6, having eaten 6 beans the day before and having had no symptoms for nearly 24 hours when he had nausea and headache. Temperature and pulse were as in the first case. Recovery was uneventful. The third patient ate one bean on Jan. 4 and was taken sick at 9 P.M., with severe vomiting and purging. His urine had a specific gravity of 1.026 and an increase in sulphates. Temperature 97.5° F. Treatment with morphine and atropine, rapid recovery.

It is interesting to note that the man who ate 14 beans was very slightly affected, while the one who had eaten one bean became almost comatose and could give no account of himself and had to be carried in. One of the officers was similarly taken ill four hours after eating four beans. He had vomiting and purging and a trace of albumin in the urine. Temperature, 98° F. He recovered in three days.

On examination it was found that the three prisoners with several others had been cutting weeds on Jan. 4. They cut down a lot of the *Ricinus communis*. One of the men collected the beans and shared them with the three prisoners. They tasted like English walnuts. The man who collected them and a sergeant who ate a hundred were only slightly purged, but not really made ill. There was evidently a marked difference in the individual susceptibility to the poison.

Very few cases of this form of poisoning are reported in the literature. In the *British Medical Journal* for 1901 a fatal case, after taking two beans, is recorded. Dr. Winslow had a case at the University Hospital. The patient was a boy of fifteen years who ate 10 or 12 beans and was seized with vomiting. The bowels became very constipated. The patient had a dry tongue, rapid pulse and a mottled, livid skin and seemed to be very ill. Calomel had no effect. Cocaine was given and the food stopped in order to check vomiting. There was delirium and the temperature was subnormal until near the end, and when it had risen to 104° F. At this time there was profuse diarrhea. The patient died on the twelfth day, evidently from cardiac exhaustion. The urine showed a few hyaline casts. It has not been possible to determine the amount of ricin present in each bean.

Dr. Winslow remarked on the striking condition of the skin in his patient, it being pink at times and then purple, evidently because of a markedly sluggish circulation.

Dr. Thayer said that ricin is in many ways similar to the toxin of diphtheria and animals may be similarly immunized against it. He asked if it were not possible that those of Lieutenant Bispham's cases, which escaped serious effects, may have previously eaten the

beans? On the other hand, they may have had natural immunity.

Dr. Ruhrhā said it may also be possible that the man who ate many of the beans had a profuse and early diarrhea and thus excreted most of the poison.

Lieutenant Bispham replied that the man had not had severe diarrhea. As to whether they had previously eaten of the beans, he did not question them on that point.

#### NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Regular Meeting, held Monday, February 8, 1903.*

The President, H. Brooker Mills, M.D., in the Chair.

**Headrest for Removal of the Brain.**—Dr. Addinell Hewson gave an exhibit of Dr. B. Stroud's mechanism, together with remarks upon such removal in a private house.

The instrument consisted of a horizontal flat piece of oak and an upright piece in which the head rests, and is secured in place by two screws on the medial aspect of the two jaws, which clasps the head just above the mastoid process, thus holding it absolutely horizontal and firm, the clamps being adjusted by means of the thumbscrews. With this instrument it is possible to remove the brain and the entire dura from the base of the skull, the dura being very easily removed in the case of a fresh body, while, of course, if the body has been dead for some time, very often the embalming fluids interfere with its removal, those containing zinc particularly having this effect. By the use of the laminectomy forceps the entire spinal cord can be removed intact with the brain in a few minutes and, if properly hardened in solutions, can afterward be studied. The author referred to the fact that he had done five operations in life with these forceps, and in every case complete recovery had ensued with great relief to the patient. In one case a man who had previously had five stones removed from the bladder, had the spinal canal opened at the fourth vertebra, the adhesions separated between the dura and the spinal cord, for a distance of six inches above and below the seat of the fracture and the man was able to go about on crutches afterward. Prior to the operation he had had no motion of the lower extremities or control of the bladder or bowels.

Dr. T. Turner Thomas felt that this instrument would be an excellent one with which to make a specimen of the brain and spinal cord, which he thought would be of great value.

Dr. Judson Daland felt that the instrument would be particularly valuable for the performance of autopsies in private houses and for very accurate work in medico-legal cases, and in cases where there is cerebrospinal disease. The two instruments exhibited by Dr. Hewson, for the opening up of the spinal canal, he felt were particularly valuable, and by having the handles made of wood and using a wooden mallet the work could be quickly performed and with but little noise.

**The Diagnosis and Treatment of Bronchopneumonia.**—Dr. Judson Daland called attention to the fact that the disease had become quite prevalent within the past ten years, occurring principally between the months of November and March. There are a variety of causes, such as the irritating gases, iron dust, silica and similar irritants and in many of the constitutional infectious diseases bronchopneumonia is not an uncommon complication or sequelæ. Bronchopneumonia following influenza is quite prevalent during the winter season, in which there occurs an inflammation of the bronchial tubes and alveolar, which being largely leucocytic, may involve only a few of the lobules, or may in-

volve many lobules in the same region, and not infrequently extends to both lungs. This is one of the peculiarities of bronchopneumonia, and is more interesting because it bears upon the question of diagnosis. The case may be of the most trifling character in the beginning, and yet develop into bronchial pneumonia. The micro-organisms in this disease are especially interesting, usually the staphylococci and streptococci, although many believe that the colon bacillus is capable of producing this infection in the bronchial tubes and alveolar. The infection is believed by many to be contracted through the nasopharynx and larynx and certain diseases of these regions no doubt stand in close causal relation to many cases of bronchopneumonia and, even in health, the staphylococci, streptococci and pneumococci are frequently found in these regions. The author felt in the majority of cases the infection began primarily in bronchitis and later the alveolar became affected, mastoiditis also being a not uncommon complication. Thus this swelling of the bronchial tubes interferes with the passage of air through the lungs and, in the course of time produces quite an area of collapse, which it is very difficult to distinguish from bronchopneumonia and also, in association with these other conditions, there is frequently spasm of the bronchial tubes. The author also believed that in certain cases of influenza there was an affection of the nerves that have to do with respiration, by which breathing is interfered with without mechanical obstruction. He felt that, speaking broadly, it was practically impossible to clearly diagnose bronchopneumonia from the symptoms alone, excepting in those cases where the lobules invaded are so numerous that we have a condition analogous to that found in lobar pneumonia. The most important factors, therefore, in the diagnosis, are physical examination and an examination of the sputum. In bronchopneumonia following influenza the area of dulness is usually found below the inferior angle of the scapula. The dulness may occur in either or both lungs and may involve the posterior-inferior lobes. In true lobar pneumonia it is impossible to diagnose the affection by the symptomatology or the physical signs and the inference that it exists may be confirmed by the discovery of diplococci. Reference was made to the frequency with which the physical signs in this condition shift; an area of dulness being outlined one day and on the occasion of the next visit, the same area would probably be resonant on percussion, but the author felt this should be viewed rather as a corroboration than a doubt of the diagnosis. Attention was directed to the fact that too much stress in diagnosis should not be laid upon the presence or absence of bronchial breathing, as frequently, owing to the fact that the lungs are not completely aerated, breath sounds may be either absent or very much diminished, even when there is resonance on percussion.

In the treatment of these conditions, absolute cleanliness of the bronchial tubes and nasopharynx, to be secured by the use of boric acid solutions, was recommended. In order to render the secretions less acid and also to stimulate the action of the glands, the use of one liter of imported Vichy daily, or when it cannot be obtained, a watery solution of bicarbonate of sodium, one to two teaspoonfuls to the pint of water was recommended. Iodide of sodium and iodide of strontium were thought to be the best drugs, the former being best employed in the form of a saturated solution, beginning with two to three drops four times a day and increasing one drop a day until the dose reached five to ten drops four times a day. Most cases are benefited by 20 to 40 drops of the tincture nux vomica and  $\frac{1}{2}$  to  $\frac{1}{4}$  of a grain of nitrate of strychnine at four-hour in-

tervals. In cases where the cough is particularly distressing,  $\frac{1}{2}$  of a grain of heroin or  $\frac{1}{4}$  of a grain of codeine was recommended. Forced breathing at intervals for four hours was advised in order to thoroughly clean out the bronchial tubes, to secure complete oxygenation and complete inflation of the lungs. Attention was also directed to the importance of absolute rest, stimulation and good food, during the progress of the disease.

Dr. James H. McKee referred to the difficulty experienced in differentiating between the bronchopneumonias following influenza and the typhoid pneumonias in some instances and reported a case which had recently come under his observation which began with an initiatory chill, followed by high fever and a very irregular temperature, and presenting all the physical signs of bronchopneumonia. On the tenth day spots appeared; the Widal reaction was obtained, and leucopenia was present. The subdivision of the bronchopneumonias, as made by Holt, was thought to be of great value, particularly with reference to the bronchopneumonias in children, as the acute congestive form would often prove fatal in these cases before any consolidation could be detected in the lungs. The speaker felt the symptomatology to be particularly deceiving in cases of bronchopneumonia following influenza, which is usually characterized by great fluctuations in the temperature, pulse and respiration. Among the most valuable physical signs were mentioned tympani and impaired breathing at the base of the lungs. Treatment of a simple character and directed more to keeping up the vitality of the patient than to the modification of the course of the disease was recommended.

Dr. Samuel Wolfe felt that more often was it necessary to make a diagnosis from negative than positive signs and that diminished respiratory sounds at the bases of the lungs should always excite suspicion of this condition. While bronchial breathing was considered an ideal symptom, if present, he felt that it would be found only in rare cases. In regard to treatment he did not approve of the deep breathing exercises in the cases where inflammation had already set in, believing that better results would be obtained by frequently changing the position of the patient, thus allowing the infected portion of the lung to keep aeration properly and avoid the injurious effects of gravitation. Where the inflammation had not already developed, he felt that these forced breathing exercises might be of value in aborting the pneumonia.

Dr. Howard S. Kinne felt that forced breathing was inadvisable, as he believed that the lungs should be kept at rest as much as possible when there is acute inflammation. Bronchial pneumonia he stated occurred more commonly in children, while lobar pneumonia is usually found in adults.

Dr. John B. Turner felt that it was a great mistake to regard the pneumonia as being confined to the lungs entirely, as he believed it was a general disease. He referred to an attack of grip, which he had personally undergone in 1889, in which chloral bromide was administered for the cough and, with this, in conjunction with tonic treatment, phenacetin, quinine, strychnine and a teaspoonful of cod-liver oil four times a day, he made a good recovery. As a diagnostic sign, dulness in both bases was mentioned and the importance of observation for some time after recovery in order to prevent such sequelæ as phthisis was commented upon.

Dr. W. E. Parke felt that when the patient had a high temperature associated with physical signs different on both sides, it was strongly suspicious of bronchial pneumonia.

Dr. A. Bern Hirsh referred to the respirator devised by Dr. Burney Hill, by which a few drops of

chloroform are administered through the medium of a moist sponge to relieve the cough.

Dr. Francis M. Perkins suggested the value of the stimulation and depression of the spinal nerve radius by the application of heat and cold for the relief of the nervous element in these cases.

Dr. Wendell Reber referred to the statement made by a physician in the West who stated that he believed the pneumonia following influenza was largely a nervous disease. His treatment consisted of placing a bar of iron heated in the oven to the occiput and coccyx; in conjunction with which he used strychnine and iodide of ammonia and had never lost a case.

Dr. Judson Daland, in closing, stated that he had never been able to conclusively demonstrate in his own mind bronchial pneumonia in the adult and referred to an epidemic of this condition occurring among the children of emigrants in which the mortality was about 80 per cent.

The change of the position of the patient he felt to be of value in many instances. Forced breathing also would act as a preventive in many instances; and the opinion was expressed that any harm that might result from this measure would be more than counterbalanced by the good that would be done to the lung. Emphysema may at times vary the physical signs and interfere with the diagnosis of pneumonia. In regard to the likelihood of grip or pneumonia developing into phthisis, he felt that this did not necessarily ever occur; the opinion was expressed that these conditions would render the individual more susceptible to phthisis and in many instances there is primarily a small latent tubercular area, which under the influence of some such disease as influenza will become constitutional, thus calling for careful after-treatment. In regard to cotton jackets and poultices, they seem to be very little used to-day with adults. In reference to the use of the respirator, the author felt that moist air was one of the most valuable therapeutic agents in the treatment of these conditions, but that it could generally be obtained by keeping the air in the room moist without the use of this instrument. As to the influence of heat and cold on the nervous symptoms, he felt that such measures are detrimental. In cases in which the temperature is very high, water at a temperature of 100° F. may be cautiously employed.

In those cases where there has been a constitutional disease, and we have pulmonary manifestations in a short time, the neurotic element arises and becomes prominent. Collapse of the lung following pneumonia was thought to be quite frequent.

#### NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, held Tuesday Evening, March 3, 1903.  
The President, Wm. Egbert Robertson, M.D., in the Chair.

The retiring President, Dr. Wendell Reber, made an address in which he reviewed the work of the Society during the past year.

**The Early Diagnosis of Pregnancy.** —Dr. J. J. Gurney Williams directed attention to the frequency with which this condition is overlooked during the first ten weeks owing to the atypical symptoms presented, and recommended careful bimanual examination, and observation of both the objective and the subjective signs. In the majority of cases he feels that the patients are led to consult the physician on account of the amenorrhea, for which there are many other causes than pregnancy, which causes he considered under three

heads: (1) Those cases in which menstruation has never taken place, which he felt was most likely to be caused by some defective development of the uterus or ovaries, or some constitutional states, such as chlorosis, anemia or phthisis, and reported three cases which had come under his observation; their ages being respectively eighteen, twenty-two and thirty years. In many of these cases menstruation does not begin until the assumption of marital relations. The second class of cases are those in which the menstruation has been suppressed and include by far the greatest number of cases. When a patient of this class presents, previous regularity or irregularity and a history of any pelvic operations should be considered, as even dilatation and curettage may cause one or two periods to be missed. The third class are those cases in which the blood is retained within the uterine cavity or vagina, as from atresia or imperforate hymen, and a physical examination will reveal at once a congenital or acquired condition of the vagina or uterus. Among the various causes for the suppression of menstruation are change of climate, as the country girl coming to the city and starting to work in a mill, fear of illicit pregnancy, desire for offspring, great mental activity, catching cold or getting the feet wet just prior to an expected period. The use of bromides in epilepsy is also said to cause this condition and two cases had come under the author's observation which had suffered from amenorrhea for two months after using a mixture of zinc sulphate and digitalis "to prevent smallpox." Supra-involution following labor or miscarriage and injections to prevent conception may also cause this condition and, as a point of diagnostic import, it should be borne in mind that amenorrhea arising from any other cause than pregnancy usually manifests itself in some constitutional disease, such as anemia, general debility and weakness. The mammary signs are not constant and often misleading, but in pregnancy, the nipple is usually more prominent, the areola darker and Montgomery's tubercles enlarge and, if in combination with these symptoms there is frequent micturition, this is a valuable adjunct to diagnosis. Nausea varies greatly in time and severity. The author felt that the most important reliable objective symptom is the change in the shape of the uterus, which in the virgin is pyriform, and when pregnancy occurs the fundus rapidly enlarges and changes in form and, as this examination can only be made between uterine contractions, repeated examinations may be necessary to find the uterus at rest. Hagar's sign in conjunction with the other symptoms is very valuable after the second month; softening of the cervix is not constant and may be caused by metritis. The bluish discoloration of the vagina just posterior to the urethra can be observed as early as the fifth week and is of considerable value and, when produced by a fibroid or pelvic congestion, is of a lighter blue. A cervix lower than normal and increase in weight of the uterus are important symptoms, and salivation, stimulated or perverted appetite, a feeling of drowsiness and constipation are common symptoms, although valueless except in conjunction with others.

In regard to the diagnosis of ectopic pregnancy his experience was that in every case in which there is vaginal bleeding, or abdominal or pelvic pain, and the woman is presumably pregnant, a careful bimanual examination should be made, as the cases of this condition in which the diagnosis is not made are those which do not present the typical symptoms, such as sudden onset of severe pelvic pain accompanied by a bloody discharge, shreds, a leaky skin, rapid pulse, and probably tympanitis of the abdomen. While there may be a certain amount of conflict in the differential diagnosis of ec-

topic pregnancy and tubal or ovarian suppuration, it was felt that as both conditions demand operative treatment no harm would result from the procedure and, even in a normal pregnancy, in the vast majority of cases an exploratory incision will do no harm.

The discussion was opened by Dr. Walter F. Woods who directed attention to three classes of cases, in which he had found it exceedingly difficult to make an authentic early diagnosis of pregnancy. (1) Pregnancy occurring during lactation; (2) amenorrhea occurring during the progress of some debilitating disease; and (3) where the patient intentionally tries to deceive the physician. The cause of the difficulty in the first group is that the uterus is somewhat involuted following delivery, requiring from six weeks to three months to return to normal, and if amenorrhea occurs during this period, the abnormal position of the uterus is apt to conflict with the differential diagnosis. In the second class of cases, it is necessary to study all the symptoms which the primary disease might produce and make a diagnosis chiefly by exclusion. The third class of cases require careful investigation, as they are prone to give a false history of the menstrual periods and other symptoms. The patient's history should be carefully noted and considered in conjunction with the physical examination which should be made in all cases and a familiarity with the patient's habits, mode of thought and the physical condition of her genital organs is of value, which places the family physician in a better position to make the diagnosis than one who is called in for that especial purpose. The nervous phenomenon manifested should be given consideration, and in many instances a naturally nervous patient will become of a composed temperament during the first few weeks of pregnancy, and one who usually has a placid disposition will frequently become very irritable. The reflex gastric disturbance which may occur at different times during the day is a valuable symptom and usually before the morning sickness appears there is an undue craving for certain articles of food, while the appetite, as a whole, may remain about normal. In many instances flesh is assumed quite rapidly. To the family physician who is familiar with the shape and position of the patient's uterus, the change in the position and size during the first few weeks of pregnancy may be an important aid in diagnosis. Another important factor is the softening of the cervix, and while this occurs at each menstrual period, it disappears shortly thereafter unless a pregnancy has taken place, in which event it is continuous. This sign is especially valuable in primipara, while in multipara, the variation in the cervix from lacerations, etc., frequently obscures the Hager's sign. The condition of the mammary gland, such as deepening of the color of the nipple and enlargement and pricking sensation in the gland are signs which should be studied in conjunction with the others. One of the most valuable signs he considered was the irritable bladder—and although menstruation frequently causes a more frequent desire to pass urine, the condition is continuous if caused by pregnancy. The purplish or bluish condition of the vagina should be looked for and, although this may be brought about by pathological states, it usually occurs earlier in pregnancy than in the other conditions, the reason being that in pregnancy the blood is brought to the uterus primarily, while the pathological conditions simply dam up the blood in the uterus so as to produce this sign. Shaef-fer's sign, he stated he had never been able to demonstrate.

Dr. J. Thompson Schell felt that one of the greatest difficulties was encountered in the different classes of patients, it being comparatively easy to elicit the various signs in thin women with flexible abdominal walls,

while the reverse is equally true of a very stout woman, particularly if she is nervous and excitable. In the latter, if a positive early diagnosis is required, he recommended an examination under ether. The breast changes were considered valuable, although he stated that he had observed them in pathological conditions, but he viewed as the most important symptom the marked anteflexion of the uterus which is usually present. While he did not consider there was one symptom upon which a positive diagnosis could be made, he felt that by carefully considering the added weight to the uterus, the increased amount of vaginal and cervical secretion, with beginning softening of the cervix, the fact that the cervix is generally partially prolapsed, the uterus further down in the pelvis and heavily supported, and by careful vaginal and rectal examination and the so-called Hager's sign, you can say that the woman is probably pregnant. The beginning of a violet color in the vagina later becoming blue is of value, and by three or four examinations at intervals of a week, the diagnosis should be made with reasonable certainty.

In ectopic pregnancy, an early diagnosis is of vital importance, and this condition may exist without the presence of any of the customary signs, such as a history of sterility, etc., the only symptom may be shock. It was recommended that in all cases where the patient complains of amenorrhea, pain in the abdomen, a little leaking from the vagina, that she may be examined under an anesthetic. A case was reported of a woman who had been married for a number of years; had been sterile for seven years, and up to one month prior to the time she was seen had menstruated regularly without pain, at which time she missed a period. There was some pain in the lower portion of the abdomen, but no great evidence of shock and her temperature was normal. An examination under an anesthetic was decided upon, a vaginal examination made and an ectopic pregnancy discovered.

In regard to Shaef-fer's sign it was considered absolutely unreliable, except in conjunction with other symptoms and, in the majority of cases, was believed to be absent.

Dr. Samuel Wolfe said that, while he believed that it was practically impossible to make a positive diagnosis of pregnancy in the early months, felt that the family practitioner who was more or less familiar with the physical condition and history of his patients could generally be fairly certain of his diagnosis in these cases. Pregnancy is in many cases suggested by the fact that one of the married patients, who has previously been regular, misses a period, and unless this condition can be accounted for by tuberculosis, the menopause or some other external agency, it takes very little to confirm the diagnosis in his mind, the softening of the cervix and the change in the size and shape of the uterus being among the most important symptoms.

Dr. W. Wayne Babcock reported three cases, the first of which was a woman who had been sterile for eight years, and had been operated upon for laceration of the cervix, after which she developed retroversion of the uterus, which gave her a great deal of trouble, operation being advised to relieve this condition. This was, however, deferred for a number of months and finally she missed a period and passed eight weeks over her time, when an examination revealed the uterus in a retroflexed position with the fundus very large and soft and the cervix very small, leading to the conclusion that she was pregnant. On reexamination a week or two later, the mass was found to be somewhat larger but by feeling carefully could be felt what appeared to be the normal fundus, and you could demarcate a line between the mass behind the uterus and the cervix. Pain

in the pelvis was complained of and a week or two later, extra-uterine pregnancy being suspected, an operation was suggested. On opening the uterus what was supposed to be the fundus of the uterus was found to be a small fibroid, the whole uterus being studded with fibroids, and as they were directly in the path of the child and were growing rapidly, the whole organ was removed.

The second case was that of a woman who is the mother of two living children and nine others, who were born living and died at from six to nine months, the last child having been born about three months previously and the last menstruation having occurred about six weeks prior. She complained of pain in the abdomen and a sense of weight in the lower pelvic region; on examination superficial softening of the cervix and considerable enlargement was discovered and the speaker felt positive that she was pregnant.

The third case was that of a woman who had been wearing a stem pessary for two years to prevent conception, removing it during the menstrual period. The pessary was slightly longer than was necessary. She complained of constant bleeding which she seemed unable to stop. She had a distinctly enlarged and soft uterus but pregnancy was not thought of. A curettage was done and the character and amount of material removed indicated that a pregnancy had taken place, in spite of the precaution, which the speaker viewed as a good field for the development of malignant disease.

Dr. I. C. Gerard felt that more dependence must be placed on the previous history and the physician's familiarity with the patient than anything else, the difficulty in diagnosis being particularly prominent in cases from which no history can be elicited and a physical examination will not be permitted, which is frequently the case in those who are illegitimately pregnant.

Dr. William L. Pepper referred to a case in which the patient had a bloody discharge during the early months of pregnancy and miscarriage was feared. She subsequently menstruated during the pregnancy and a healthy boy was born at the end of nine months. He also stated that he had frequently noticed that in women in whom the sexual desire is very great before pregnancy begins, will lose all desire for it during gestation, while in those in which the sexual desire is not usually so great, will become abnormally sexually excited during pregnancy.

Dr. J. Edward Wallis felt that there were no sufficient signs to make a positive diagnosis until the end of the third month, although of course amenorrhea and morning sickness may be present.

Dr. L. C. Peter emphasized the fact of the difficulty in making the diagnosis in those patients suffering from a chronic debilitating disease and reported the case of a woman who was suffering from what he believed to be Addison's disease, who had been married seven years and had had no offspring. She presented all the subjective signs of pregnancy, although nothing could be felt on physical examination. Subsequent events proved that she was not pregnant, although she afterward became so and fifteen months later gave birth to a child.

Dr. Hugh P. McAniff reported the case of a woman who was suffering from gastric ulcer and tuberculous disease and, notwithstanding the anemia and her true physical condition, subsequently became pregnant, after which the lung trouble cleared up. The sputum had been previously examined and tubercle bacilli found, but they could not be discovered after the pregnancy.

Dr. W. H. Thomas reported the case of an Irish woman whom he had attended in five confinements. During the second pregnancy she had more or less show

each month throughout the entire period, lasting from two to six days, while in the other four pregnancies, amenorrhea existed. During the intervals between her pregnancies her menstrual periods would last from five to six days, sometimes necessitating going to bed.

Dr. Carle Lee Felt reported the case of a woman who had borne three children, examination after the birth of the third child, revealing laceration of the cervix. A curettage was done, and a short time afterward, she stated to her physician that she was two months pregnant. Seven months after this she was delivered of a full term child which proved that she must have been pregnant at the time of the operation.

Dr. J. S. Gurney Williams, in closing, stated that he had made a number of observations with the urine of pregnant patients and had found that after the first twenty-four or forty-eight hours a skin-like substance would form on the top of the urine and, if it was held up to the light, particles could be seen rising therefrom. This he had not observed in any urine except in cases of pregnancy. The history and symptoms he believed to be practically worthless, except they were borne out by the examination. Pinkish vaginal discoloration just posterior to the urethra was mentioned as a sign of considerable value.

The vaginal incision in ectopic pregnancy was not recommended, as in the majority of cases this necessitates two incisions in order to control the hemorrhage.

#### SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Meeting of April 1, 1903.

The President, Robert T. Morris, M.D., in the Chair.

**Rabies.**—Dr. H. D. Gill presented this paper. He said that there were still many who believed that hydrophobia was not a specific disease, though one might just as well say that smallpox could arise spontaneously and be contracted by healthy persons. For years we had been led to believe that rabies was quite rare, yet during 1902 twenty cases had come under his own observation, and from personal conversation with six other veterinarians who cared for dogs he learned that each of them had had about a dozen cases in the past year. There were two forms of the disease, as seen in the dog, the furious and the dumb. The duration of the first stage was from twelve hours to two days, during which time the animal showed changes in conduct. Soon the appetite became poor and likewise perverted. The second stage, or that of irritation, lasted four days, and was characterized by spasmodic attacks of madness. The animals then showed a great inclination to bite and appeared to be devoid of fear. In the third or paralytic period the animal presented a sullen expression and the gait was staggering. Death occurred from the fifth to the eighth day as a result of cerebral paresis. The most characteristic symptom of dumb rabies was the drop of the lower jaw. The lower jaw being paralyzed the dog could not bite even if it had any desire to do so. Death usually occurred in from two to four days. The dumb form of rabies was very common, the owner bringing the dog to the veterinarian on the supposition that the animal had a bone in his throat. The animals were not afraid of water as was popularly supposed. One should beware of a dog who appeared dull, who was always on the move or was disposed to hide away, or who walked with the head down and barked at nothing. The ignorant methods employed by the Society for the Prevention of Cruelty to Animals were known to be responsible for the spread of rabies—indeed, the President of that society had for many years expressed the belief that

there was no such thing as rabies, and that it was not necessary to enforce regulations against that disease. Medical authorities were of the opinion that rabies was an easily controllable disease. Two important measures were the destruction of worthless and vagrant dogs, and the efficient muzzling of the dogs who appeared in public places. It was stated by one authority that in Vienna rabies was entirely suppressed by eighteen months of stringent muzzling. Prior to 1885 hydrophobia had been very prevalent in London. A muzzling order was then enforced for a year and promptly suppressed the disease, but on rescinding this order deaths from hydrophobia again became frequent. The following measures were suggested by the reader of the paper: (1) The city dog handling should be placed under proper medical or veterinary supervision; (2) the muzzling of all dogs in infected areas should be enforced; (3) separate compartments should be provided in the wagons and at the pound for each dog; (4) safe and proper places should be provided for dogs suspected of rabies, and (5) every dog bitten by a rabid animal should be destroyed or should be quarantined for at least one year. (This paper will appear in full in the MEDICAL NEWS.)

**The Best Methods for the Prevention of Hydrophobia.**—Dr. Follen Cabot was the author of this paper. He said that few physicians ever saw a case of hydrophobia, and for that reason some were skeptical regarding its very existence. In the prevention of hydrophobia there were three lines of treatment, viz.: (1) Intelligent laws with regard to animals; (2) treatment of the injury by antisepsics and cauterization, and (3) the Pasteur method of producing immunity. The disease was not specially prevalent at any particular season of the year, and the laws for the control of the disease should be enforced throughout the whole year. He believed that at the present time it was advisable in this city to enforce the muzzling of dogs for six months, but not for a longer time. Dumb rabies was the type usually seen in this city to-day. If the bite were on the face it was most serious. The micro-organism of rabies he believed to be fermentative in character, and after twenty-four hours, infected the system by way of the nerves and not by the blood. A wound not deeper than a pin-scratch might be the cause of infection. When there were wounds of the exposed parts the patient should be anesthetized, the wounds scrubbed with green soap as if for an operation, and then fuming nitric acid should be applied with a glass rod. The wounds should then be dressed surgically. This treatment should be done as early as possible, but he had shown by careful experiments that it was of value even as late as two days after the bite, and at the end of twenty-four hours would save as many as 90 per cent. of infected animals. The actual cautery was next best to the nitric acid. Nitrate of silver saved only 55 per cent. About 13 per cent. of infected animals who received no treatment did not develop the disease. He was of the opinion that the cauterization treatment just described if carried out thoroughly, and at an early stage, was even more effective than the Pasteur treatment. Guinea pigs were better animals than rabbits for inoculation experiments to establish the diagnosis because the former developed the disease more rapidly. The Pasteur treatment usually lasted from fifteen to twenty-one days, according to the position of the wound and the interval elapsing between the time of the injury and the time of beginning the treatment. Children appeared to be more susceptible to the disease, though perhaps this was because they were more apt to be bitten on the face. In case the disease developed hope should never be given up because exceptionally recovery took place. Chloral and

morphine were the best drugs to control the sufferings of the patient. (This paper will appear in full in the MEDICAL NEWS.)

Dr. R. J. Wilson reported a case which very closely simulated hydrophobia, although it was not really a case of that disease. A man, about thirty years old, was admitted to Roosevelt Hospital about three years ago, having been picked up in the street in the early morning while in "spasms." When placed in the ambulance he turned over and began to bite the pillow, and at short intervals gave a sharp bark. He said that he had been bitten by a stray animal a short time before. The diagnosis of hydrophobia was made at the time of admission to the hospital, and this diagnosis was considered to be probably correct by many of the physicians who saw the man. When seen by the speaker he was struck by the fact that the man's eyes showed intelligence rather than the vacant look usually present in hydrophobia. Nevertheless, the man presented the usual symptoms of the disease, such as spasm of the larynx, extending to the chest and ending in opisthotonus. It was found that a man answering this one's description had shortly before been an inmate of the Manhattan State Hospital for the Insane, and when suddenly told that he was crazy he was greatly surprised and talked for several minutes continuously forgetting all about his spasms. Up to that time he had developed spasms every time he had attempted to drink water, but at this critical moment he swallowed water without difficulty. The man was proved to be crazy, and not a victim of hydrophobia. One of the medical students made the statements that this could not be hydrophobia because the mouth was dry instead of saliva dribbling freely from the mouth. Two months later, Dr. Wilson said he saw a case that was proved beyond all question to be genuine hydrophobia, and yet the mouth was dry and the tongue, fissured.

Dr. William H. Park emphasized the fact that cauterization prevented infection in most cases, but not in all, and that the same was true of the Pasteur treatment. The cases least likely to be favorably influenced were those in which the face had been bitten. The prompt and thorough use of cauterization would usually retard the spread of the infection through the nervous system sufficiently to allow of the successful application of the Pasteur treatment. The latter had been applied to animals and had proved exceedingly useful. As in the sad case recently occurring in this city, the wound was on the face, the infection reached the nervous system before the Pasteur treatment could be used. Experiment had shown that one-ten-millionth of a cubic centimeter of the brain or spinal cord would cause infection in other animals when inserted into the brain. It should always be borne in mind that even in the very slightest wound it was most important to wash off the virus. The deaths from rabies and from hydrophobia had not varied much in New York city for the past three years, though the infected areas had changed from time to time. There were on an average from six to nine deaths a year. There was no question about the great importance of having all dogs muzzled for a certain length of time.

Dr. Alexander Lambert spoke of the possible difficulties in diagnosis. Rabies began with restlessness, dread and fear of being disturbed. Tetanus developed with a malaise and beginning rigidity of the jaws or a stiffness of the wounded portion. It was interesting to learn that infection of rabies probably spread through the nervous system because this seemed to be the manner in which the tetanus poison spread to the brain. In the Southwest the people were much in dread of being bitten by skunks, as these bites often resulted in the development of hydrophobia in a period varying

from eight weeks to three months. It was well to remember that even the free use of soap and water and scrubbing would save many from the disease. He firmly believed that the dogs of this city should be muzzled because the efficiency of this simple preventive measure was beyond all question. There should be a vigorous protest on the part of the medical profession in this city against the present method of allowing the ordinance with regard to muzzling to go unenforced.

Dr. N. E. Brill asked how Dr. Cabot had proved that cauterization within forty-eight hours destroyed the virus, and on what animals Dr. Park had demonstrated the fact that one-ten-millionth of a cubic centimeter of the virus was fatal.

Dr. Park replied that the guinea-pig was the animal used.

Dr. Cabot said that he had introduced the pure rabic virus into a wound in the animal, and had sewed up the wound for periods of twenty-four to forty-eight hours. The wound was then opened and various cauterizing agents employed. In this way it was found that nitric acid saved 91 per cent. of the animals, whereas when nothing of this kind was done all but 13 per cent. of the animals died of rabies. This latter percentage had remained quite constant throughout the series of experiments.

Dr. Brill, continuing, said that some years ago he had been especially interested in this topic, although skeptical regarding the then new Pasteur treatment. There were even now some doubts in his mind. The nature of the so-called virus was unknown, and it did not act like any other infection known to the human species. It had no known and fixed period of incubation, some cases developing the symptoms within a few days, and others not until three years afterward. If the infectious agent were a toxin it certainly did not act like the allied toxin of tetanus. In the latter disease there was, within reasonable limits, a fixed period of incubation. He did not mean to say that rabies did not exist, but it was an extremely rare disease. In 1891 he had been asked to perform an autopsy upon an animal who had been bitten by a supposedly rabid animal, and who developed symptoms three months after the bite. The man died in convulsions within four days. Some of the material was placed in bichloride and taken to the surgeon-general, and later the report was that this material had been inoculated into guinea-pigs and that they had all died of dumb rabies. If the infectious agent were fermentative the effect of the bichloride would have been different. Dr. Brill said he had experimented on dogs with some of the same material, but with unsatisfactory results. He had previously experimented with the dry glycerine extract on a healthy dog, also with soap and with decomposing urine. The skull was trephined and the material introduced under the dura. In rabbits the symptoms of dumb rabies were obtained. In dogs in which infection occurred the autopsy showed diffuse encephalitis and the symptoms were those of an active cerebral disturbance in which the dog became almost maniacal. Guinea-pigs were found to be peculiarly susceptible to any form of intradural injection. Paralytic symptoms and death followed the subdural injection of a substance like soap. These experiments had made him very skeptical with regard to the disease under discussion, and while he could not doubt its existence he found it utterly impossible to understand the phenomena recorded as a part of this disease. As soon as the cry of "mad dog" was raised there would be epidemics of rabies immediately reported. Dulles, of Philadelphia, and a veterinarian in Minnesota had shown that a number of diseases in the lower animals had been mistaken for rabies, such as intestinal para-

sites, parasites of the brain and spinal and meningeal infections. In all of these cases the animals presented the classical symptoms of rabies. He could not, therefore, believe that this was a prevalent disease.

Dr. Wilson asked how soon the guinea-pig showed symptoms after the inoculation.

Dr. Brill replied in from four to five days.

Dr. S. E. Getty, of Yonkers, reported a case occurring in St. John's Hospital. On August 17, 1902, a child of five years was found with an incised wound running diagonally across the forehead and tip of the nose. The wound was cauterized and healed by first intention. At the time of admission on September 12, the boy was very irritable, and had a number of irregular convulsions. Later on it was stated that some persons had seen the child bitten by a dog. The child appeared bright but frightened; the pupils were unequal; respirations were rapid and shallow; the pulse was rapid. When offered fluid or when irritated in any way there was an irregular convulsive seizure with spasms of the muscles of deglutition. The urine was negative, and defecation was normal. The spasms recurred three or four times an hour. The temperature was 100.5° F., and by the morning of September 14 reached 104° F. The pulse varied from 122 to 140. Unfortunately the dog that had bitten the child had been killed before bringing the little one to the hospital. Two animals were inoculated with an emulsion of the spinal cord of the boy. One animal was found dead forty-eight hours later, death having occurred during the night. The second animal developed paralysis and convulsions, and died shortly afterward. No well-marked lesions of the brain or cord were found.

Dr. Frederick Holme Wiggin said that about thirteen years ago, while in the country, he had been called to see a boy of fifteen years, who was said to be dying of rabies. The boy had been bitten by a dog about six months previously, but had shown no symptoms until about a week before the time the speaker was summoned. The case attracted much attention, so that on reaching the house it was found to be crowded with people, and the boy the center of attraction. It was discovered that the boy's temperature was normal, and that he was shamming. The judicious use of tickling and slapping, together with a few plain words as to what might be expected next, sufficed to effect an immediate and complete cure.

Dr. Alexander Lambert asked Dr. Cabot if it were not true that the majority of guinea-pigs die of furious rabies when inoculated.

Dr. Cabot replied in the affirmative.

Dr. Lambert then remarked that if a guinea-pig exhibited dumb rabies he would doubt very much if the animal really had rabies.

Dr. Cabot said that syphilis might develop within a few weeks or not for several months, and in this respect furnished a counterpart to hydrophobia. In carrying on his work he had inoculated about 3,000 rabbits, carrying the disease from one to another. In every case the symptoms had been absolutely the same. After a period of six days the animal developed a tremor and a peculiar oscillation of the pupil, and in a day or two more the gait became staggering. In from twenty-four to forty-eight hours the animal became completely paralyzed, and death speedily ensued. The fact that the disease had a varying incubation period simply meant to him that the mode of entrance of the virus was different. The Pasteur treatment was carried on in about half a dozen places in this country. The injections were rather painful for about ten minutes, probably largely owing to pressure upon the nerve terminations. He had never seen any bad symptoms from the treatment out of 175 cases, so that it was safe to say that

there was no danger in this treatment. The shortest authentic incubation period in hydrophobia was twelve days; the shortest he had personally observed was seventeen days, while the average was five weeks to three months. The longest authentic period was six months. The symptoms were quite typical. Three or four days before the constitutional symptoms appeared the infected wound became swollen and sensitive. The next thing noted was a slight difficulty in swallowing or a falling off of the appetite. After this there was apt to be some restlessness or nervousness. Then the eye assumed a typical appearance; the pupil became dilated and the expression of the eye was similar to that observed in typhoid fever. The patient soon became extremely irritable, so that he would jump up or shriek out at the slightest sound or even at a current of air. As the difficulty in swallowing increased, the patient was apt to use a handkerchief frequently to wipe off the saliva, not necessarily because of an increase in the quantity of saliva but because of the difficulty in swallowing it. As the disease progressed, the accumulation of tenacious mucus was apt to cause difficult and somewhat noisy breathing, and these sometimes caused a sudden and peculiarly hoarse cry, which was popularly described as a "bark." The spasms gradually became more and more frequent, affecting the spinal muscles and the diaphragm, the pulse and temperature increasing and, after an interval of from three to eight days from the onset of the acute symptoms, death supervened from exhaustion or in convulsions. As a rule, the mind was clear to the last; there was no effort to bite or become violent, and the patient only complained bitterly of his sufferings. Anesthetics should be given, or chloral by the rectum. Dr. Cabot said that in these cases the urine should be examined. Albuminuria was almost invariably present. Two weeks must elapse after the completion of the Pasteur treatment before the full protection afforded by that treatment was obtained—in other words, if there was a period of about five weeks in which to secure immunity the development of the disease was highly improbable.

Dr. Park said that undoubtedly many cases of hysteria were thought to be hydrophobia, nevertheless the latter occurred occasionally at the present time, about seven times a year among three million people. After having watched so many animals in the laboratory infected with rabies it seemed to him impossible that any one could believe that the symptoms so regularly developed by these animals were due to toxic matter other than the virus of rabies. Moreover, dogs very often presented the typical symptoms of the disease known as rabies, and yet they did not suffer from hysteria.

Dr. Brill said that he had been entirely misunderstood, for, he had distinctly stated his belief in the existence of rabies, and that it was prevalent among certain of the lower animals. The symptoms of the disease in a guinea-pig and in a rabbit, as formerly described by Roux and others, were identical. He did not believe that the cases of rabies in man were by any means as frequent as reported.

Dr. Gill said that Dr. Cabot had made the statement that rabies was no more prevalent now than it was some time ago. He would say in this connection that many cases of dumb rabies were harmless, exhibiting no tendency to bite, and appearing in an early stage to be quite rational. The only cases reaching the laboratory were those which had bitten some human being; hence the veterinarians saw a great many more cases of rabies than would appear to exist from the laboratory statistics.

Dr. Robert T. Morris said that some years ago he had been asked to see a person supposed to be suffering

from hydrophobia, and he had found conditions very similar to those so graphically described by Dr. Wiggin. The patient, a boy, had been bitten by a dog five or six months previously, and the animal was still alive. The boy was apparently semiconscious, and would occasionally growl and snap at anything passed before his face—in short, presented the "newspaper symptoms" of rabies. He had been in this condition for several days in spite of large doses of morphine and chloral. Dr. Morris said that he became convinced that the condition was the result of suggestion, and that it could be relieved in the same manner, and by following out this line of treatment the boy was well on the road to recovery in a day or two. There was no question that many of these persons died, and perhaps largely because no surgeon was called in to cut off the drugs. The negative testimony presented by Dr. Brill was very interesting, and should be carefully collated, studied and given its true value.

Dr. Gill, in closing the discussion, said that veterinarians noticed that when a dog from one locality became infected with rabies they usually saw several other similar cases from the same locality. He had watched some experiments made nearly twenty years ago by Dr. Spitzka on the introduction of various substances beneath the dura mater in dogs, and, as a result, both he and the experimenter had lost their skepticism regarding rabies. The chief object of his paper this evening was to present the great need of proper control of dogs.

## BOOK REVIEW

**PHYSIOLOGY.** A Manual for Students and Practitioners. By THEODORE C. GUENTHER, M.D., Assistant Physician and Chief of the Medical Clinic, Norwegian Hospital, Brooklyn, and AUGUSTUS E. GUENTHER, B.S., formerly assistant in Physiology in the Medical Department, University of Michigan, Medical Epitome Series. Edited by V. C. PEDERSEN, A.M., M.D. Illustrated with fifty-seven engravings. Lea Brothers & Co., Philadelphia and New York.

THIS the first volume of the new Medical Epitome Series, is the most readable "condensed" physiology that we have seen. Though condensed, it is not in any sense "elementary," such a phrase, for example, as "the streaming phenomena in plant-cells and in the pseudopodia of rhizopods," without explanation, implying either previous biological study, or attendance in the physiology lecture-room. The arrangement in sections on secretion, absorption, reproduction, etc., is that of the larger works, and an appendix gives the metric system and the more common chemical tests in physiological analysis. That "oxygen, being absolutely essential to the continued existence of life, is in this sense a food" may be true, but that should scarcely entitle it to a place in a list of food-stuffs under the heading "Digestion." Among the theories of the nature of protoplasm, Bütschi's foam theory is the only one mentioned. A pocket manual on a scientific subject like physiology can never replace the regular textbooks, because for brevity's sake its statements must be dogmatic and therefore contrary to the spirit of scientific study. Yet by a rapid perusal of these pages, a practitioner whose knowledge of physiology has become rusty, may furnish it up to a considerable degree. The style of the book is a credit to the publishers, the illustrations are chosen with good judgment, and a very full review-series of questions is placed at the end of each chapter.